LGE PDP Repair Manual

PDP42V7**

Service
Service
Service

ServiceManual

Contents **Page**

1. Technical Specifications, Connections, and Chassis Overview 2
2. Safety Instructions, Warnings, and Notes 5
3. Directions for Use 5
4. Mechanical Instructions 6
5. Service Modes, Error Codes, and Fault Finding 8
6. Block Diagrams, Test Point Overviews, and Waveforms 24
7. Circuit Diagrams and PWB Layouts 25
8. Alignments 26
9. Circuit Descriptions, Abbreviation List, and IC Data Sheets 28
10. Spare Parts List 32
11. Revision List 33

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PHILIPS

1. Technical Specifications, Connections, and Chassis Overview

Index of this chapter:

1.1 Technical Specifications PDP42V7*

1.1 Technical Specifications PDP42V7*

The PDP Module is divided into a Panel part and a Drive part. The Panel part consists of Electrodes, Phosphor, various dielectrics, and gas, while the Drive part includes electronic circuitry and PWBs.

1.1.1 General Specification

Model Name	:	PDP42V7*
Number Of Pixels (HxV)	:	852 (*3) x 480
Pixel Pitch (HxV μm)	:	1080 x 1080
Cell Pitch (HxV μm)	:	320 x 1080
	:	(Base: Green Cell)
Display Area (HxV)	:	920.1x518.4 ± 0.5 mm
Outline Dimension (HxVxD)	:	1005x597x60.6±1mm
Colour Arrangement	:	RGB closed type
Number Of Colours (RxGxB)	:	1024 x 1024 x 1024
Weight	:	14.7 ± 0.5 kg
Aspect Ratio	:	16:9
Peak Brightness	:	Typical 1500 cd/m^2
	:	(1/10 white window)
	:	Average 100:1
	:	(Light room 100 Lx at centre)
Contrast Ratio	:	Typical 10000:1
	:	(Dark room 1/10 white window, white window pattern at centre)
Power Consumption	:	Typical 200 W
	:	(Full White) [1]
Lifetime	:	Over 60,000 Hrs. (Initial brightness 1/2)

Note 1) It can increase to 300 W depending on input image.

1.1.2 Definitions

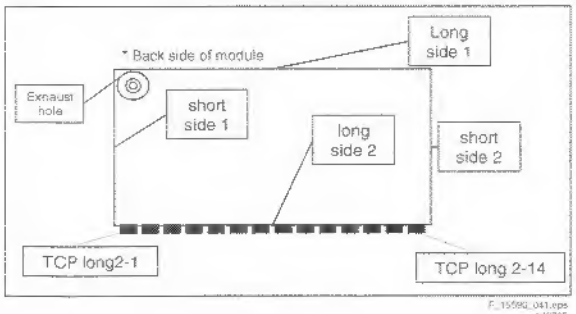

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Figure 1-1 Definition of module position

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Figure 1-2 Identification label

1. Model name.
2. Bar code (Code 128, contains the manufacture no.).
3. Manufacture no. (Module serial no.).
4. The trade name of LG Electronics.
5. Manufacture date (Year & Month).
6. The place of origin.
7. Model suffix.

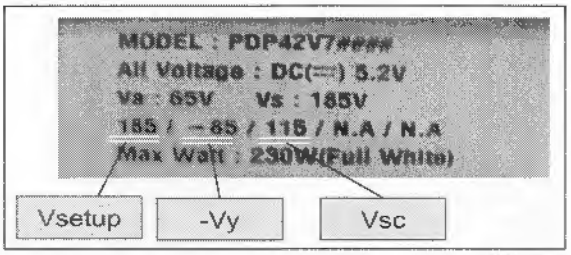

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Figure 1-3 Voltage label (on backside of module)

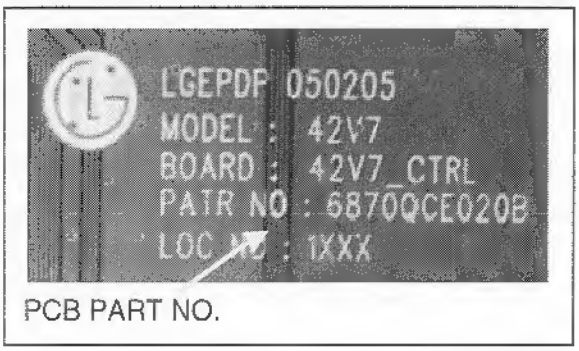

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Figure 1-4 Part number printing (on board)

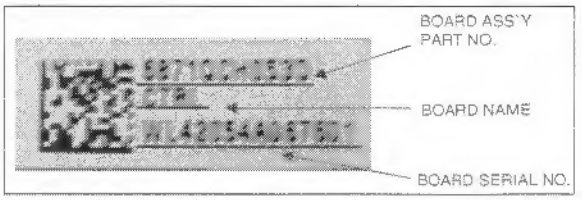

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Figure 1-5 Part number label (on board)

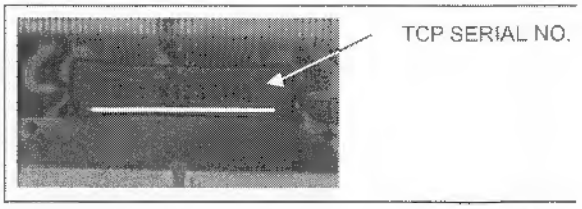

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Figure 1-6 TCP serial no. (on TCP)

1.1.3 Connection Overview

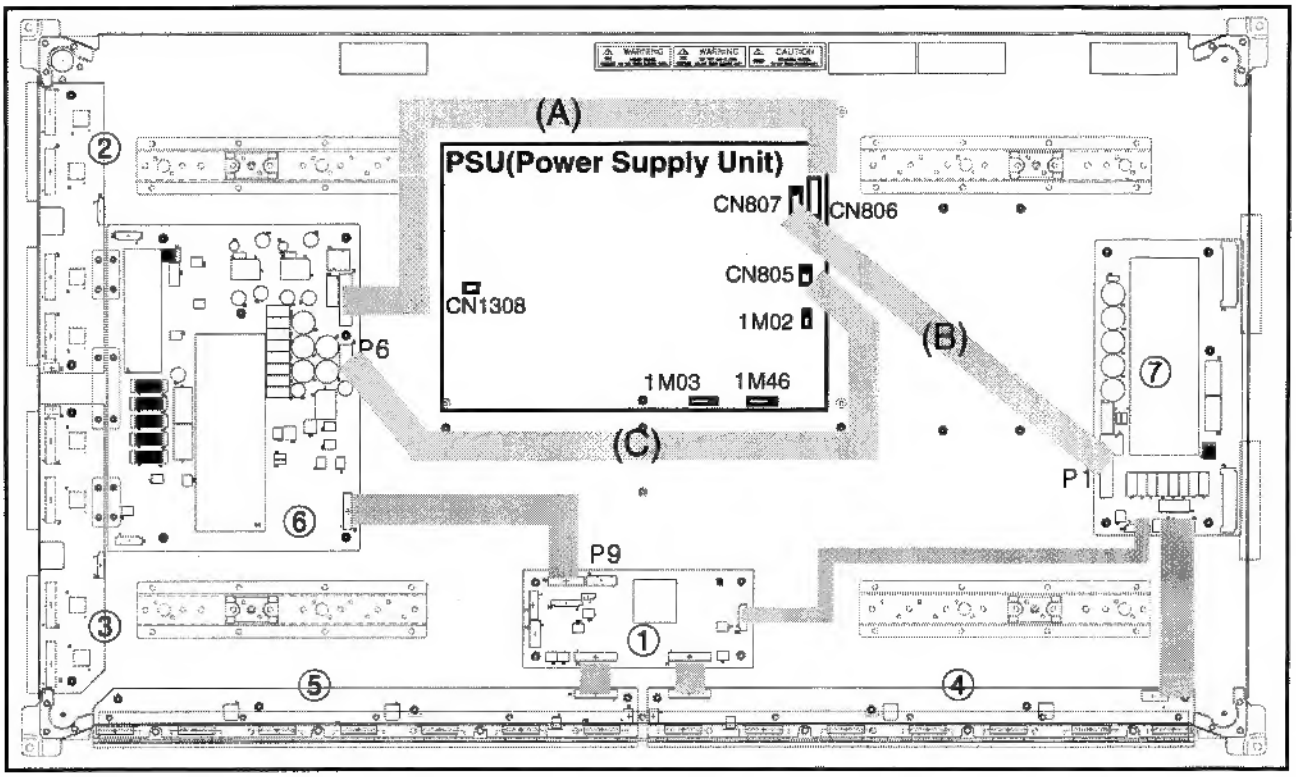

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Figure 1-7

Table 1-1 Connector signals

No	Connector	Input voltage & signal
P1	Z SUS board	5V, Va, Vs
P5	Y SUS board	Vs
P6	Y SUS board	5V
P9	CTRL board	Control signal

Table 1-2 PSU Cable Assies

No	LGE Part No.	Description
A	6631Q39032A	Cable assy 10p PSU->Y-SUS
B	6631Q39033A	Cable assy 8p PSU->Z-SUS
C	6631Q39034A	Cable assy 4p PSU->Y-SUS

Table 1-3 PSU Connectors

No	Input voltage & signal
CN806	Vs: 187 V
CN807	Vs: 187 V, Va: 65 V, 5 V
CN805	5V
CN1308	AC 220 V
1M02	+Vsnd: +18 V, -Vsnd: -18 V
1M46	8V6: 8.6 V, +12V: 12 V, +5V2: 5.2 V, Vtun: 50 V
1M03	5V_sw: 5.2 V

Table 1-4 Board overview

No	LGE Part No.	Description of board assy
1	6871QCH053D	LVDS CTRL
2	6871QDH084A	Y-DRV TOP
3	6871QDH085A	Y-DRV BTM
4	6871QRH055D	X-R
5	6871QLH047D	X-L
6	6871QYH036C	Y-SUS
7	6871QZH041A	Z-SUS
For Philips order codes, refer to "Ch. 10 Spare Parts".		

1.1.4 Chassis Overview

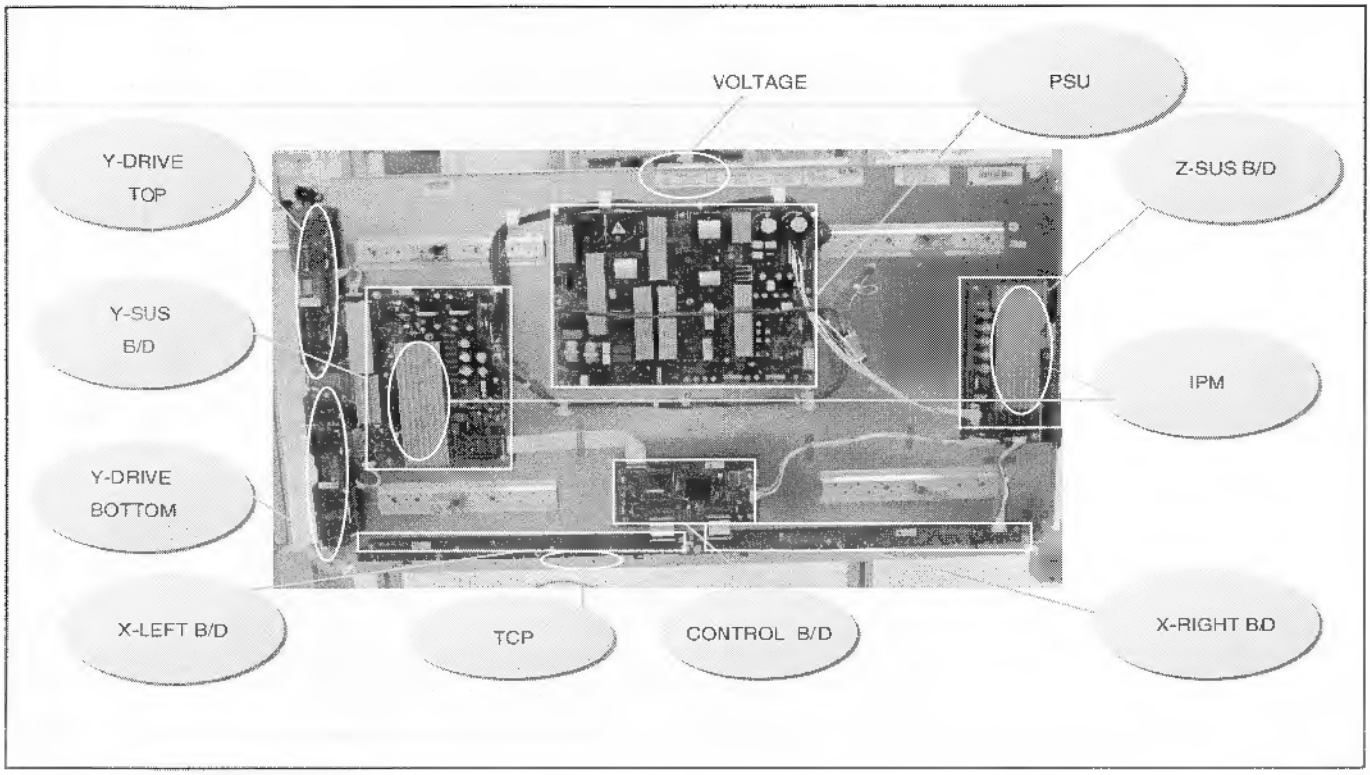

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Figure 1-8 PWB location

2. Safety Instructions, Warnings, and Notes

Notes:

- Only authorised persons should perform servicing of this module.
- When using/handling this unit, pay special attention to the PDP Module: it should not be enforced into any other way then next rules, warnings, and/or cautions.
- **"Warning"** indicates a hazard that may lead to death or injury if the warning is ignored and the product is handled incorrectly.
- **"Caution"** indicates a hazard that can lead to injury or damage to property if the caution is ignored and the product is handled incorrectly.

2.1 Warnings

1. Do not touch the Signal and Power Connectors while this product operates. Do not touch EMI ground part and Heat Sink of Film Filter.
2. Do not supply a voltage higher than specified to this product. This may damage the product or can create hazardous situations.
3. Do not use this product in locations where the humidity is extremely high, where it may be splashed with water, or where flammable materials surround it. Do not install or use the product in a location that does no satisfy specified environmental conditions. This may damage the product or can create hazardous situations.
4. If a foreign substance (such as water, metal, or liquid) gets inside the product, immediately turn "off" the power. Continuing to use the product may cause electric shock or can create hazardous situations.
5. If the product emits smoke and abnormal smell, or makes an abnormal sound, immediately turn "off" the power. Continuing to use the product may cause electric shock or can create hazardous situations.
6. Do not (dis)connect the connector while power to the product is "on". It takes some time for the voltage to drop to a sufficiently low level after the power has been turned "off". Confirm that the voltage has dropped to a safe level before (dis)connecting the connector.
7. Do not pull out or insert the power cable from/to an outlet with wet hands. It may cause electric shock.
8. Do not damage or modify the power cable. It may cause electric shock or can create hazardous situations.
9. If the power cable is damaged, or if the connector is loose, do not use the product, otherwise, this can lead to hazardous situations or may cause electric shock.
10. If the power connector, or the connector of the power cable, is dirty or dusty, wipe it with a dry cloth. Otherwise, this can lead to hazardous situations.
11. The PDP module uses a high voltage (max. 450 V_{DC}). Keep the cautions concerning electric shock and do not touch the device circuitry handling the PDP unit. And because the capacitors of the device circuitry may remain charged at the moment of Power "off", standing for 1 minute is required in order to touch the device circuitry.
12. Because the PDP module emits heat from the glass panel part and the drive circuitry, the environmental temperature must not be over 40 deg. C. The temperature of the glass panel part is especially high owing to heat from internal drive circuitry. And because the PDP module is driven by high voltage, it must avoid conductive materials.
13. If inserting components or circuit boards in order to repair, be sure to fix a lead line to the connector before soldering.
14. If inserting high-power resistors (metal-oxide film resistor or metal film resistor) in order to repair, insert it 10 mm away from a board.
15. During repairs, high voltage or high temperature components must be put away from a lead line.
16. This is a cold chassis but you better use an isolation transformer for safety during repairs. If repairing the electricity source part, you MUST use the isolation transformer.
17. Do not place an object on the glass surface of the display. The glass may break or be scratched.
18. This product may be damaged if it is subjected to excessive stresses (such as excessive voltage, current, or temperature). The absolute maximum ratings specify the limits of these stresses.
19. The recommended operating conditions are conditions in which the normal operation of this product is guaranteed. All the rated values of the electrical specifications are guaranteed within these conditions. Always use the product within the range of the recommended operating conditions. Otherwise, the reliability of the product may be degraded.
20. This product has a glass display surface. Design your system so that excessive shock and load are not applied to the glass. Exercise care that the vent at the corner of the glass panel is not damaged. If the glass panel or vent is damaged, the product is inoperable.
21. Do not cover or wrap the product with a doth or other covering while power is supplied to the product.
22. Before turning on power to the product, check the wiring of the product and confirm that the supply voltage is within the rated voltage range. If the wiring is wrong or if a voltage outside the rated range is applied, the product may malfunction or be damaged.
23. Do not store this product in a location where temperature and humidity are high. This may cause the product to malfunction. Because this product uses a discharge phenomenon, it may take time to light (operation may be delayed) when the product is used after it has been stored for a long time. In this case, it is recommended to light all cells for about 2 hours (aging).
24. This product is made from various materials such as glass, metal, and plastic. When discarding it, be sure to contact a professional waste disposal operator.
25. If faults occur due to arbitrary modification or disassembly, LG Electronics is not responsible for function, quality or other items.
26. Use of the product with a combination of parameters, conditions, or logic not specified in the specifications of this product is not guaranteed. If intending to use the product in such a way, be sure to consult LGE in advance.
27. Within the warranty period, general faults that occur due to defects in components such as ICs will be rectified by LGE without charge. However, IMAGE STICKING due to misapplying the above provision (12), is not included in the warranty. Repairs due to the other faults may be charged for depending on responsibility for the faults.
28. While assembling the PDP module into a set, use the EMI ground part of the Film Filter for grounding, BEFORE removing the protective film, to prevent that static electricity can damage the TCPs or boards

3. Directions for Use

Not applicable.

4. Mechanical Instructions

4.1 Mechanical Overview PDP42V7*

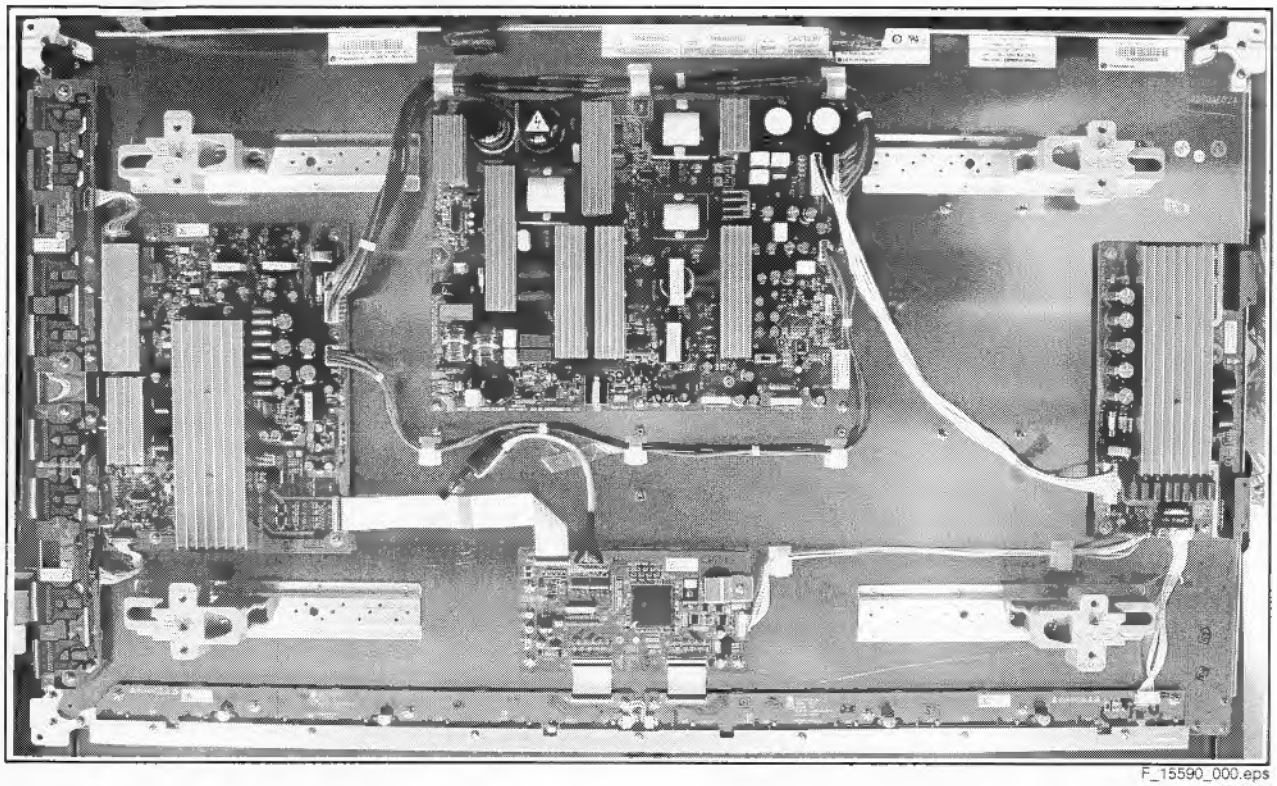

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Figure 4-1 Cable dressing

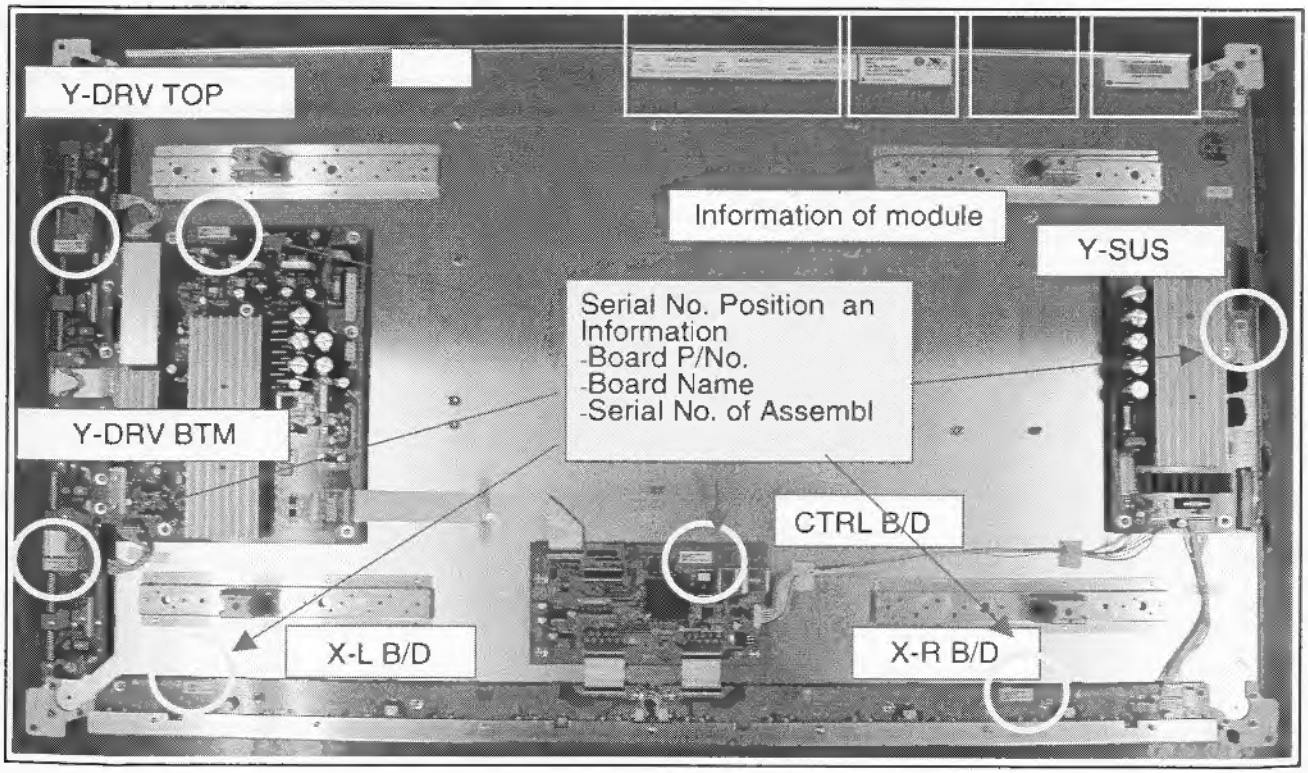

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Figure 4-2 Label location

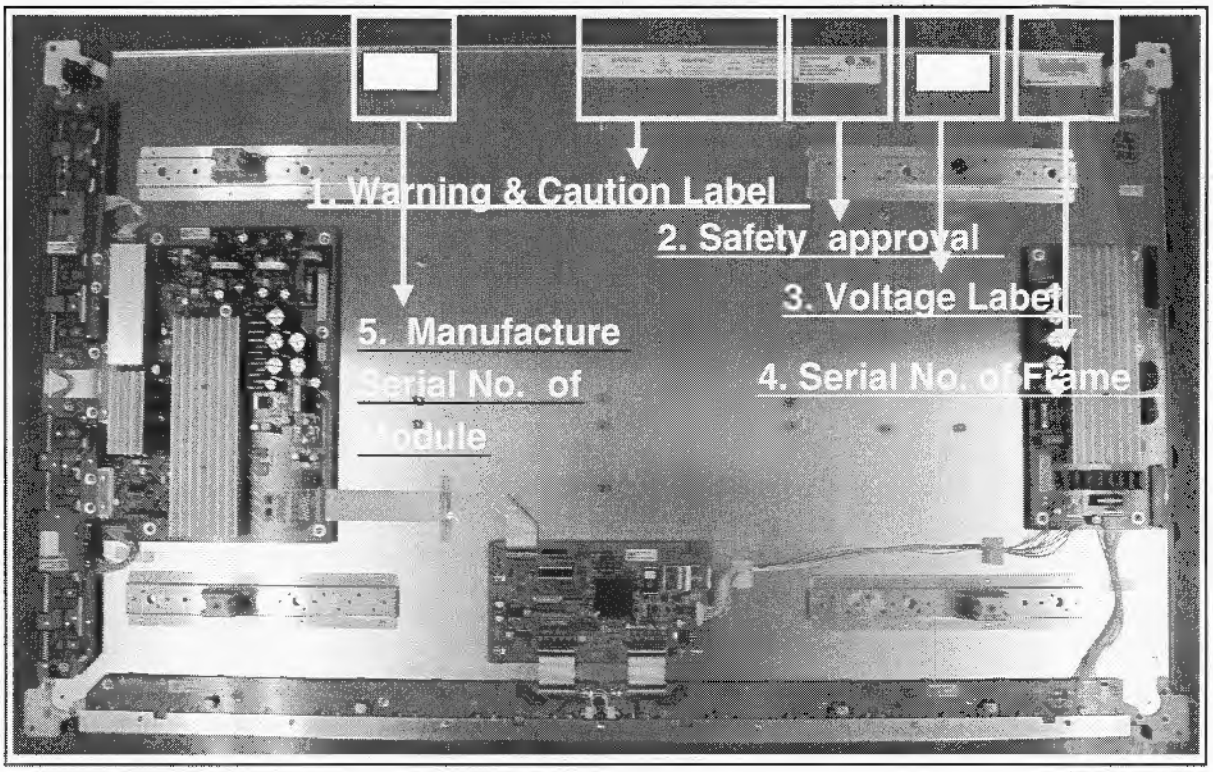

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Figure 4-3 Label indication

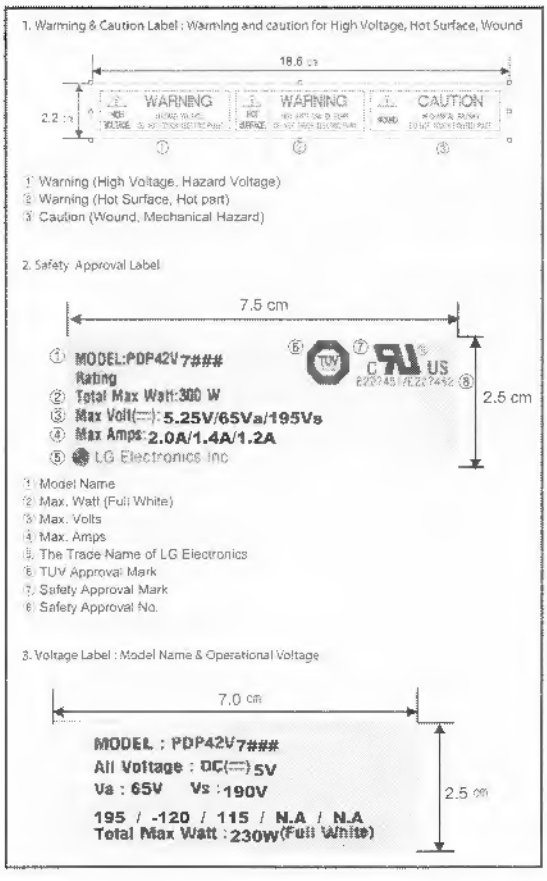

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Figure 4-4 Label information (1)

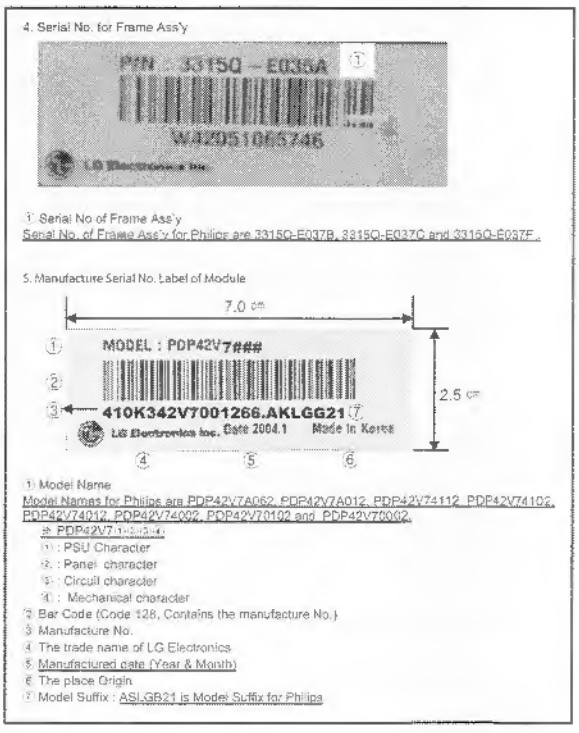

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Figure 4-5 Label information (2)

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

5.1 Quick Module Check PDP42V7*
5.2 Detailed Module Check PDP42V7*
5.3 Detailed PSU Check PDP42V7*

5.1 Quick Module Check PDP42V7*

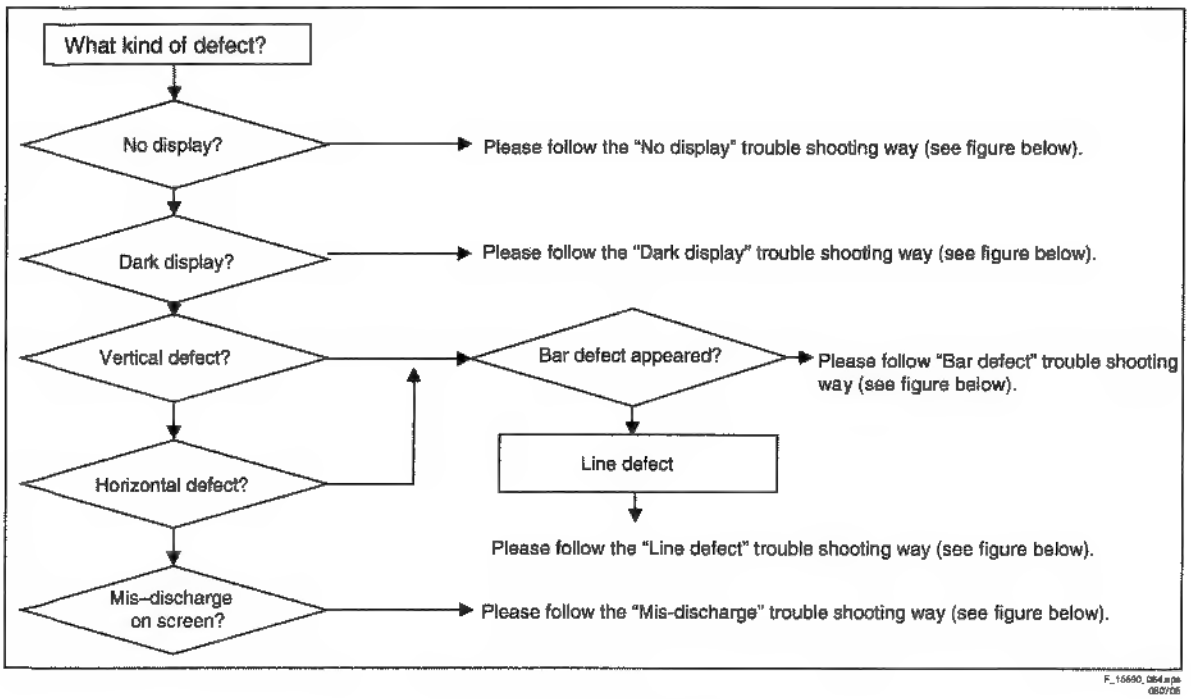

Figure 5-1 Logical judgement

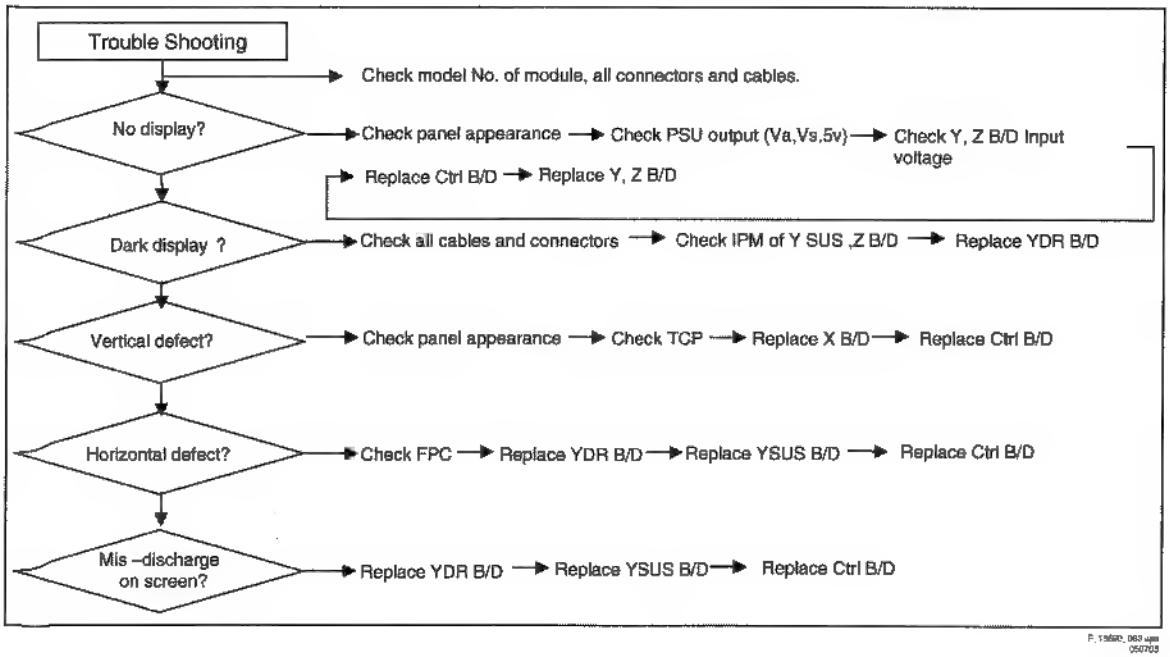

Figure 5-2 Quick check

5.1.1 No Display

Check each section with following method.
If there is a problem, replace or repair that part.
If it is not found, go to the next section.

Connectors
Confirm all connectors (PSU, Y-SUS, CTRL, Z-SUS). The module may not function normally by misconnection (can not send signal and power). Also misconnection for a long time can have a specific board failed.

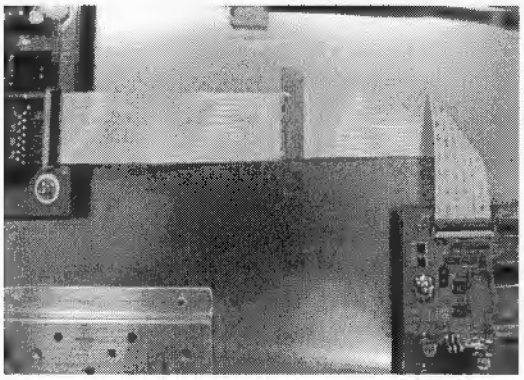

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Figure 5-3 Control + Y-SUS board

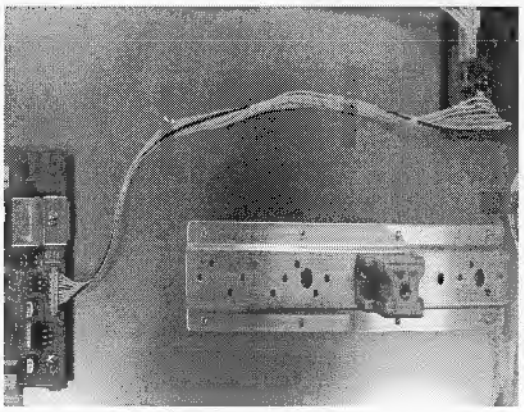

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Figure 5-4 Control + Z-SUS board

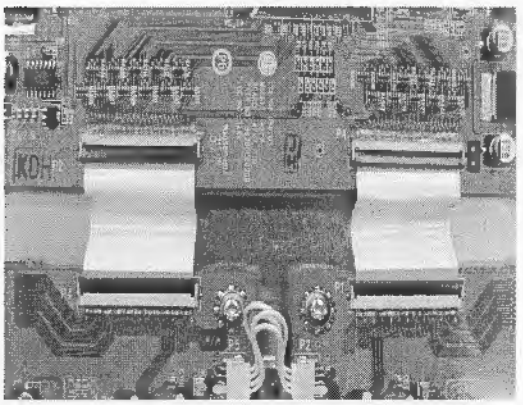

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Figure 5-5 Control + X board

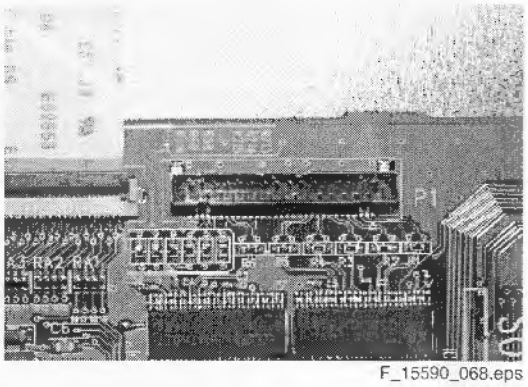

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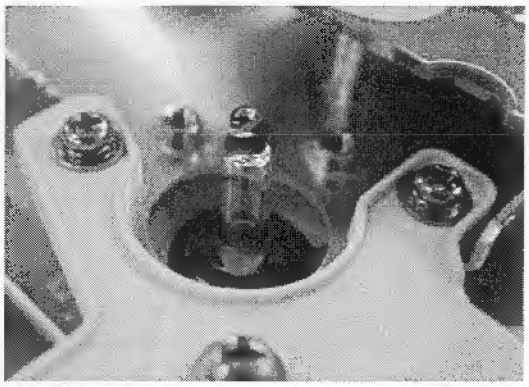
Figure 5-6 Signal input (LVDS)

Exhaust Tip
Check the Exhausting Tip for cracks with the naked eye to check the vacuum state.
If there is a problem, replace the PDP module by a new one.
In case of vacuum breakdown, the module makes a shaking noise because of inside gas ventilation.
There may be a small crack, which cannot be seen with the naked eye. This noise is different from capacitor noise.



NORMAL

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Figure 5-7 Exhaust tip "normal"

PSU (see figure "PSU trouble shooting")

1. Check each unit part of PSU inside with naked eye (capacitor, FET, IC, resistor).
2. Check fuse and switch position (on "Normal").
3. Check output voltage, which is converted from AC to DC.
4. Voltage Check (5V, Va, Vs).

When PSU protection occurred: check for short between Y-SUS and Z-SUS board.

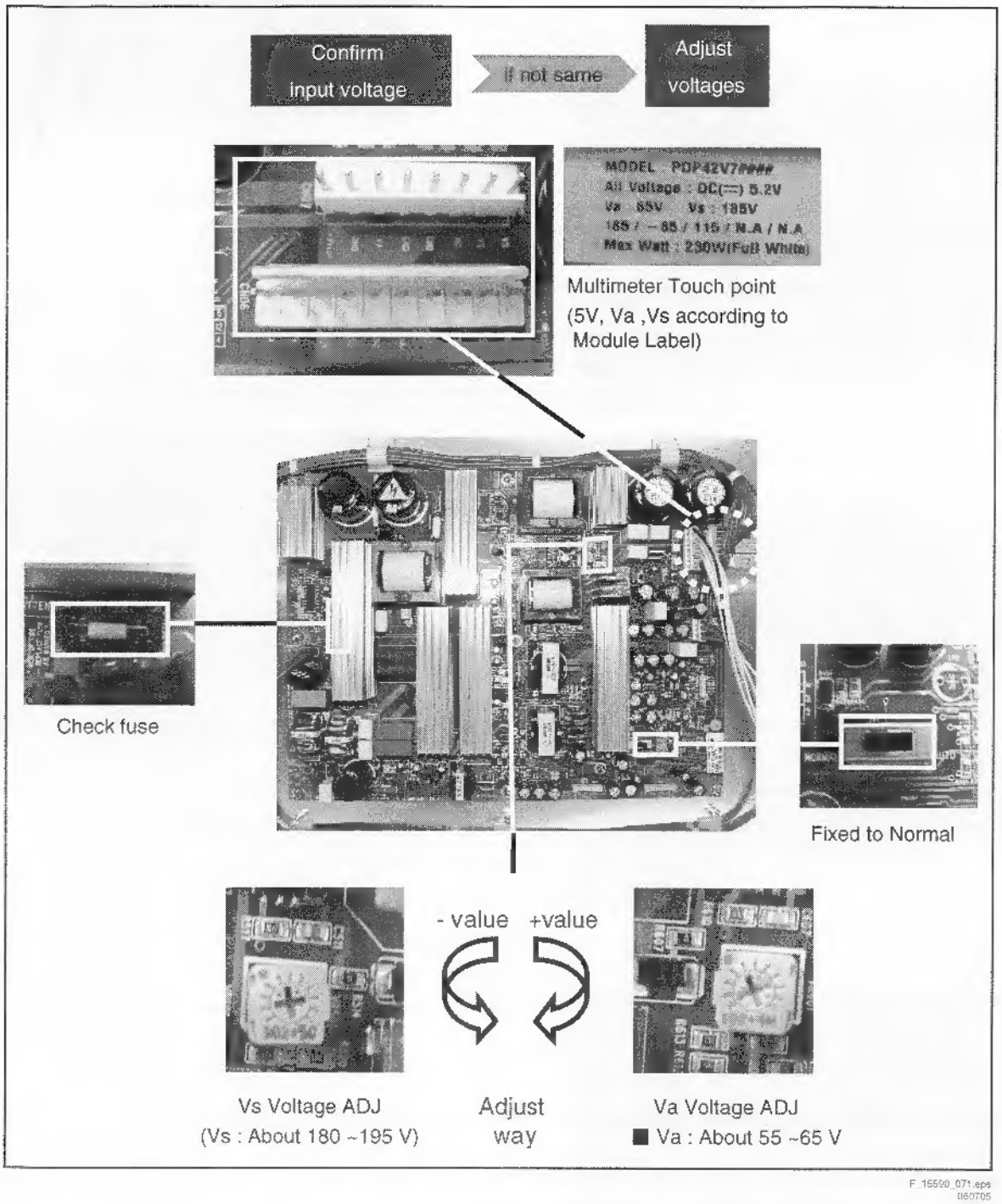

Figure 5-8 PSU trouble shooting

PSU Power Protection

There is a power protection when the power is switched "off" automatically within 2-3 min. from power "on".

The power protection function protects the boards when a short occurs on circuits of the PDP module, or when a power problem occurs. If there is no power, even after replacing the PSU, find out where the short occurred.

In case of a PSU protection, the red LED will be "on" and an error code will be displayed via the green blinking LED (see also paragraph "Detailed PSU Trouble Shooting" further on).

In case of a PSU protection, switch the service switch to "auto", disconnect the power supply connectors to the boards, to find if the if the boards are defective or the PSU itself.

Control Board (see figure "Control b/d trouble shooting")

1. Check LED status (normal status lightening or not)
2. If not, check OSC X1 output.
3. Check CTRL input voltage (connector P10).
4. Check each FET (3.3V, 5V, and 1.8V).

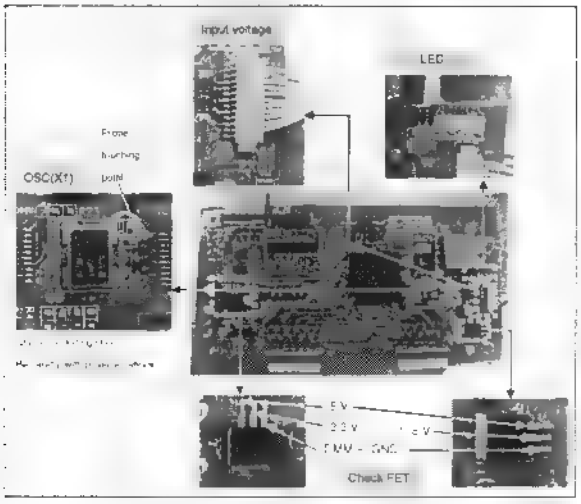

Figure 5-9 Control b/d trouble shooting

Y-SUS Board (see figure "Y-SUS b/d trouble shooting")

1. Check fuse: FS1 (5V), FS2 (Vs).
2. Check voltages (Vsetup, -Vy, and Vsc).
3. Check diode between GND and Y-SUS output.
4. Check whether output voltages agree with voltages on the label.

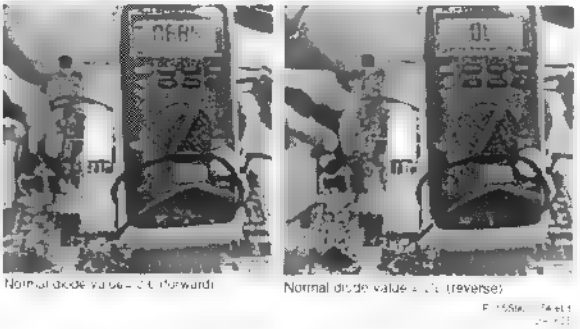

Figure 5-10 Y-SUS board output diode check

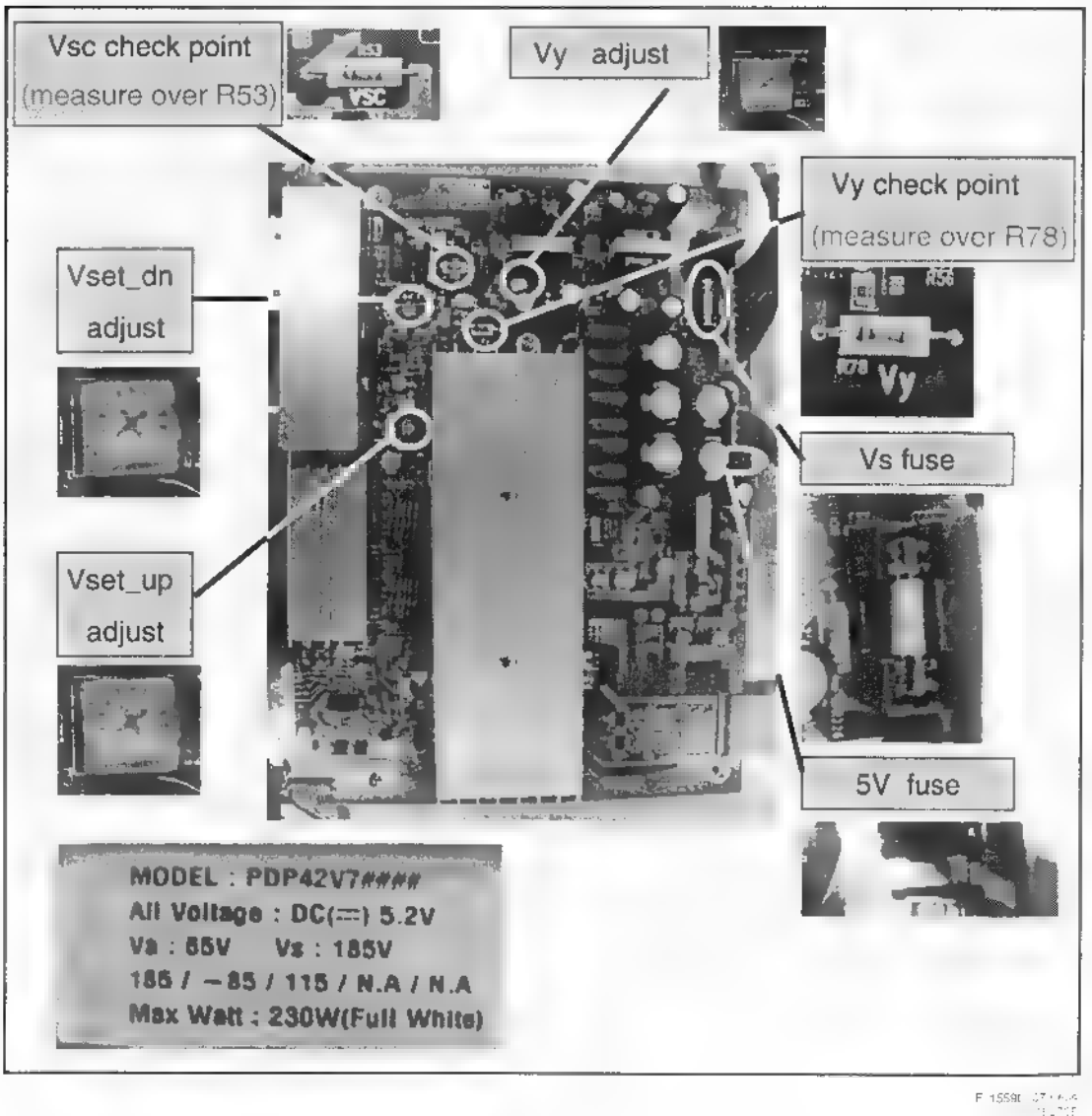

Figure 5-11 Y-SUS b/d trouble shooting

Z-SUS Board

1. Check the fuses.
2. Check input voltages (Va, 5V, and 15V)
3. Check FPC output diode value.

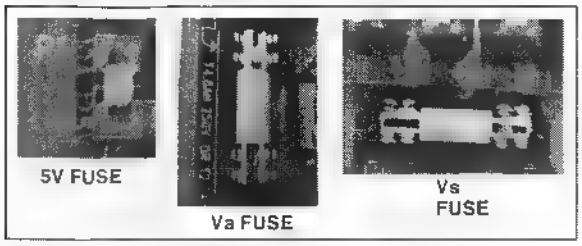

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Figure 5-12 Z-SUS board fuse check

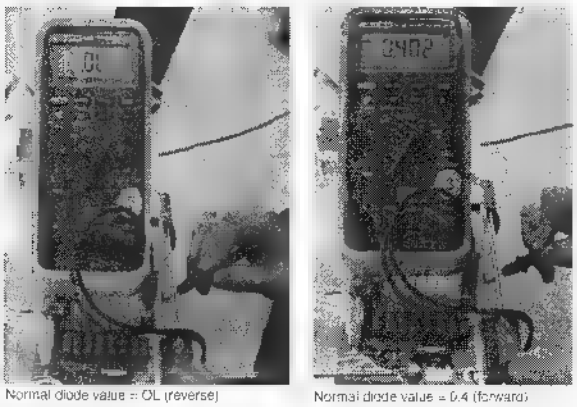

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Figure 5-13 Z-SUS board FPC output diode check

5.1.2 Bar Defect (Vertical)

Check each section with following method. If there is a problem, replace or repair that part. If not go to the next section.

Connector

Check the TCP connector and cables. If not connected well, it will result in a bar defect and abnormal display behaviour.

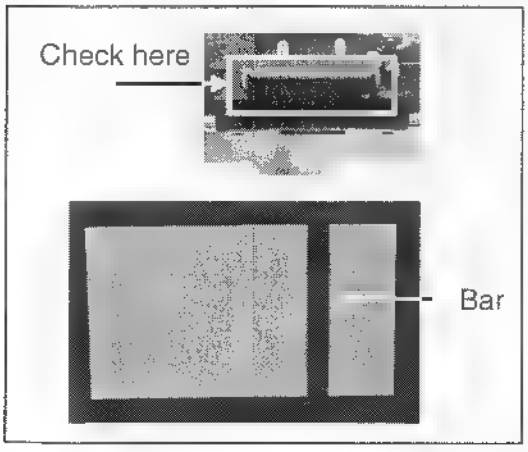

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Figure 5-14 Connector check (1)

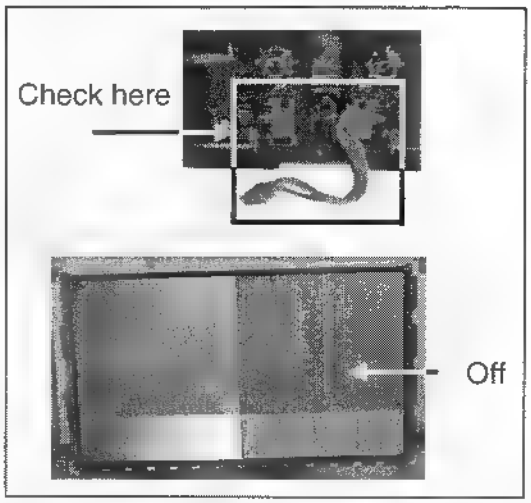

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Figure 5-15 Connector check (2)

Checking TCP

Confirm whether the TCP was torn or chopping.

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Figure 5-16 TCP torn

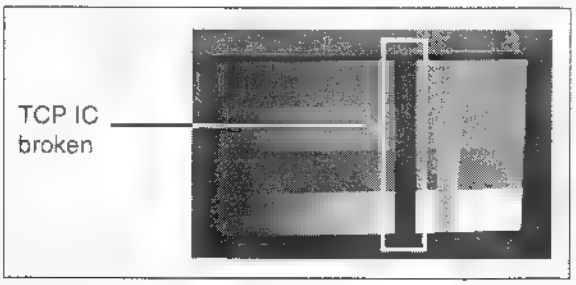

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Figure 5-17 TCP IC broken

Control Board
The Control board supplies the video signal to the TCP. So, if there is a bar defect on screen, it may be a Control board problem.

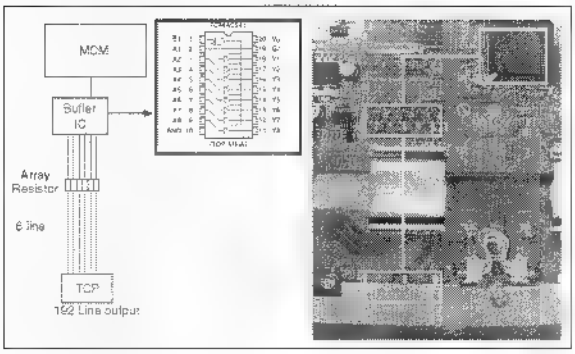

Figure 5-18 Control board address flow

5.1.3 Line Defect (Vertical)

In case of one line open or shorted, check dirt (foreign substances) in TCP connector. First, try to remove the dirt with compressed air. If, after this, the same line appears again, replace the panel.

Line Open or Short
This phenomenon is due to TCP IC inside short or electrode problem. In this case, replace the panel.

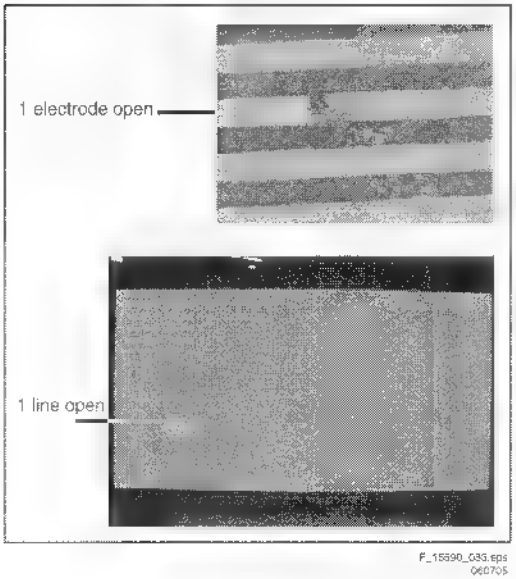

Figure 5-19 Single line defect

Line Open or Short with the Same Distance
This is MCM of Control board defect. The MCM cannot be replaced separately. So replace the Control board.

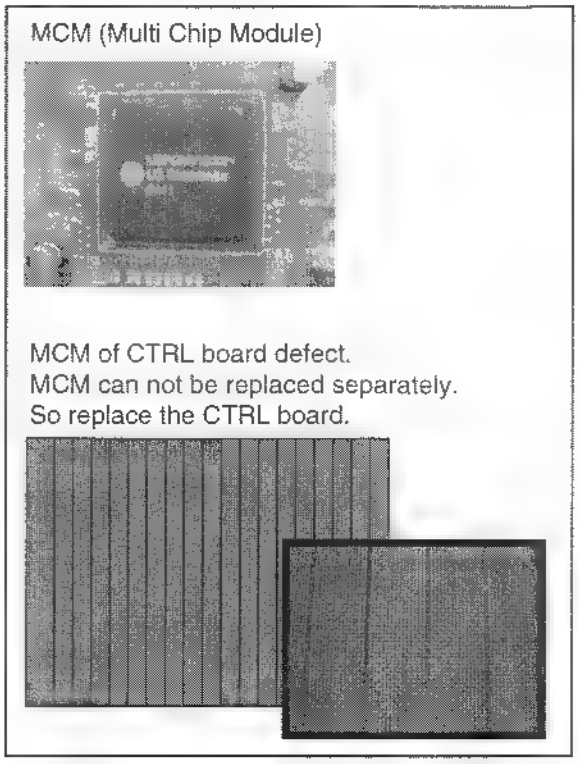

Figure 5-20 Evenly repeated lines

5.1.4 Bar Defect (Horizontal)

Most horizontal defects can be repaired. In case of adherence part of the film and rear panel electrode, or panel electrode open/short, replace the PDP panel.

Connector
If the connector on Y board and Z board are not plugged in well, it can result in a horizontal bar, because the sustain voltage Cannot be supplied to panel. So check connectors FPC and Ydrv-Ydrv first.

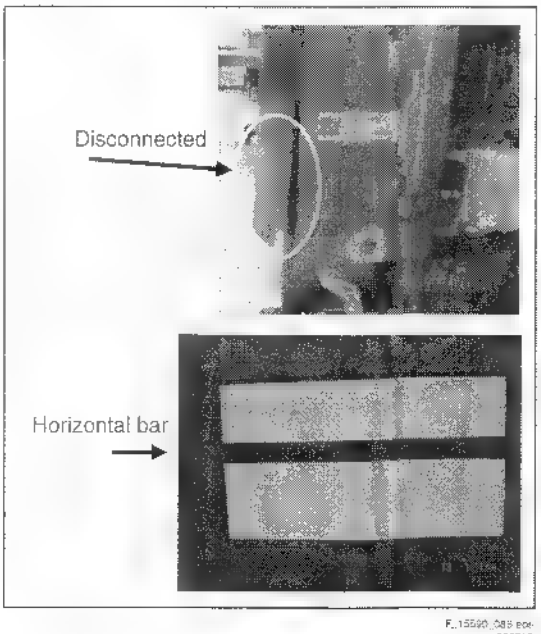

Figure 5-21 Check FPC connectors

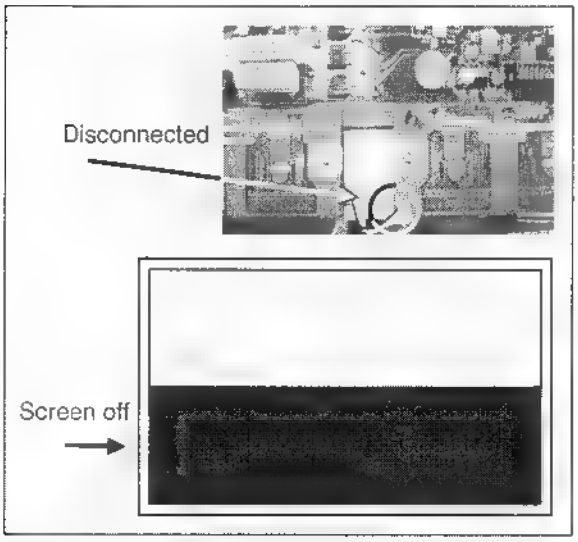

Figure 5-22 Check drive connectors

Scan IC Check
Check diode value of the right side part of the output pin.

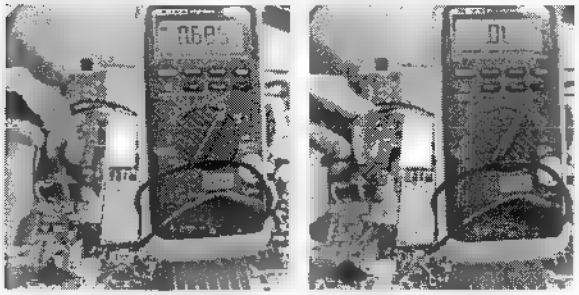

Figure 5-23 Scan IC output diode check

5.1.5 Line Defect (Horizontal)

FPC Check
In case of one or more horizontal lines, this is probably due to FPC or panel inside the Control board. Y board is just normal.

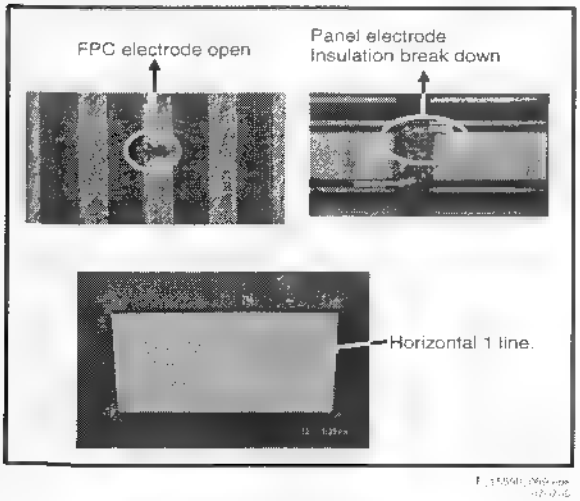

Figure 5-24 Open FPC electrode / Panel electrode breakdown

Scan IC Check
Check diode value of the right side part of the output pin.

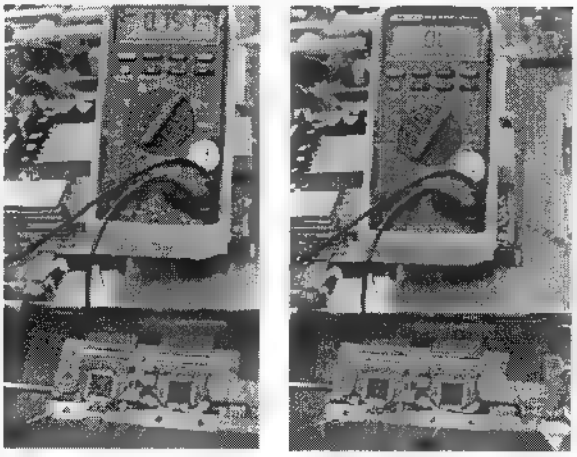

Figure 5-25 Scan IC output diode check

5.1.6 Mis-discharge Defect

Most of mis-discharge appearance is a problem of Y-DR, Y-SUS, or Z board.
Check these boards when mis-discharge occurs.

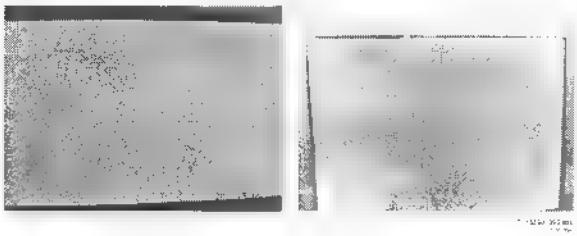

Figure 5-26 Mis-discharge

Checking Order
1. Check Y- and Z-SUS signal cable.
2. Check if Y-DRV IC is defective.
3. Check Y-SUS board voltages (-Vy, Vscw)
4. Check if Y- and/or Z-SUS IPM are defective (see paragraph "How to Check IPM" below).
5. Replace Control board

How to Check IPM

Forward direction
Measure between:
- GND (+) and Sus-out (-).
- Sus-out (+) and Vs (-).

When each two test diode values is over 0.4V => OK.

Reverse direction
Measure between:
- GND (-) and Sus-out (+).
- Sus-out (-) and Vs (+).

When each 4 nodes test diode values is infinite => OK

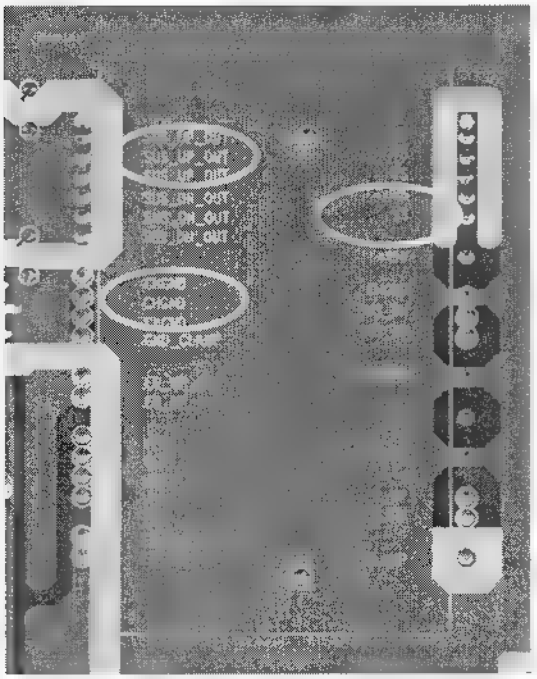

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Figure 5-27 IPM check

5.2 Detailed Module Check PDP42V7*

5.2.1 No Display

The Screen Does Not Display a Picture

1. Check whether on the CTRL board LED (D1, D2, D3, D4, and D5) is turned "on" or not.
2. Check the power and signal cable of the CTRL board.
3. Check if the X, Y, and Z boards are plugged in correctly.
4. Check the connection of the X, Y, and Z boards to the CTRL board.
5. Measure the output wave of X, Y, and Z boards with an oscilloscope (> 200 MHz) and find the trouble board by comparing the output wave with below figure.
   - Measure point for Y board: Bead B39.
   - Measure point for Z board: Bead B28.
   - Measure point for X board: P3.
6. Check the SCAN (Y side) IC.
7. Check the DATA (X side) TCP IC.
8. Replace the CTRL board.
9. Check if the fuse of Y and/or Z board is open and replace when open.
10. Check the input voltage (Vcc= 5 V, Va= 65 V, Vs= 187 V).

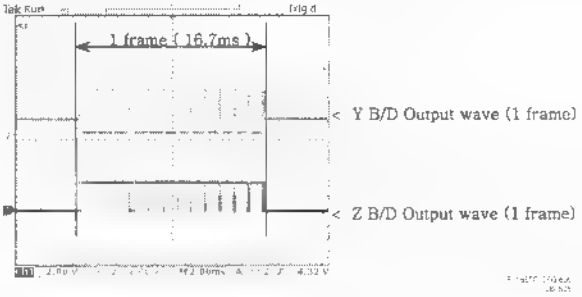

Figure 5-28 Y and Z board output waveform (1 Frame)

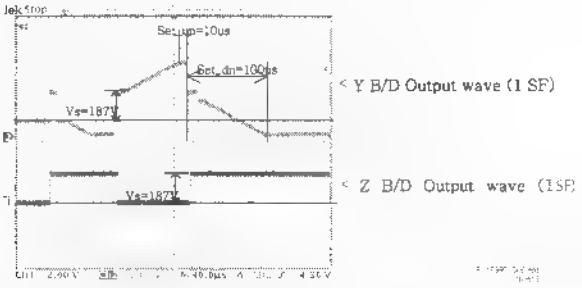

Figure 5-29 Y and Z board output waveform (1 Sub Frame)

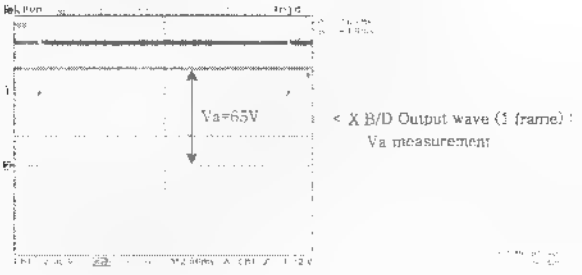

Figure 5-30 X board output waveform (1 Frame)

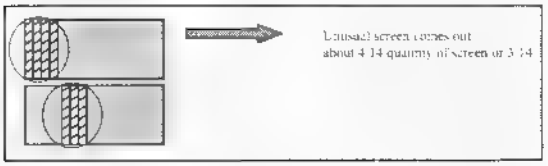

Figure 5-36 Case 3

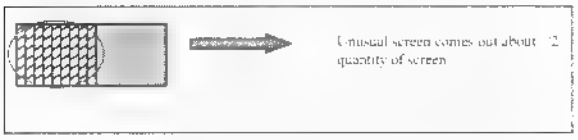

Figure 5-37 Case 4

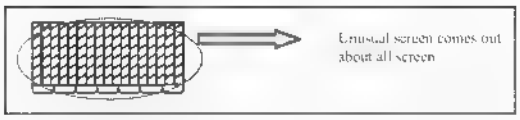

Figure 5-38 Case 5

Regular Stripe on Display

1. In case of the generation of regular vertical stripes around the location of one Data TCP IC (or more), check the connections.
2. Confirm if the connection of X board or CTRL board to X board correspond to unusual screen.
3. Replace the relevant X board or CTRL board.

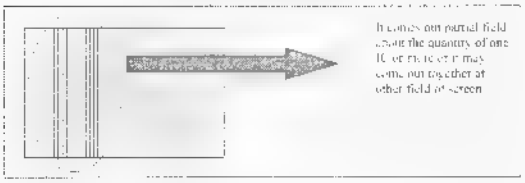

Figure 5-39 Screen display "Regular stripes"

Scan FPC Problem

1. Check the connection between Y DRV board and Scan FPC.
2. If the Scan IC is defective, replace the Y DRV board.

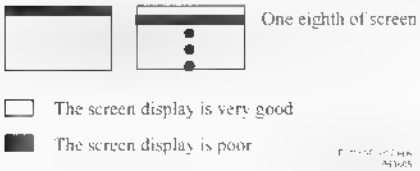

Figure 5-40 Screen display "Scan FPC problem"

- Check method of the SCAN IC
  - Change the Vpp pin into ANODE and GND pin into CATHOD, and then test the diode in forward or reverse direction.

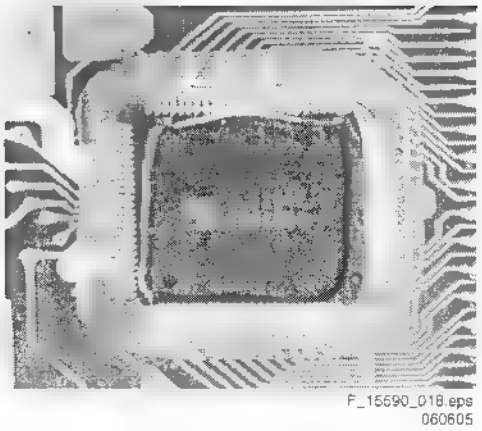

Figure 5-41 Scan IC

Vertical Line with Regular Gap (Vertical Stripe Flash at Special Colour)

- Replace the CTRL board.

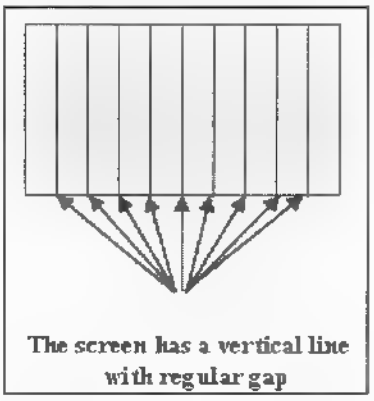

Figure 5-42 Screen display "Vertical lines with regular gap"

Data Copy into Vertical Direction

- Replace the Y-DRV board or Y board.

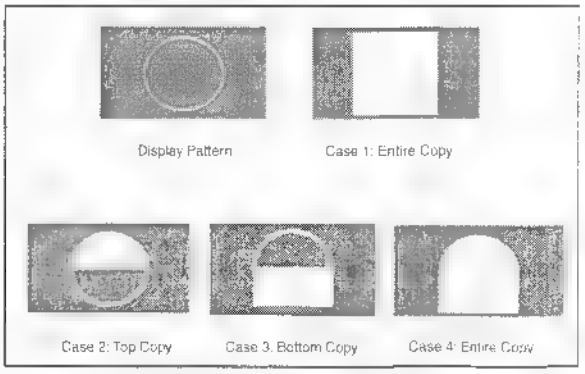

Figure 5-43 Screen display "Data copy in vertical direction"

One or Several Vertical Line(s) on the Screen

1. It may be caused by:
   - Open or short on DATA TCP FPC attached panel.
   - Defect on DATA TCP attached panel.
2. Replace Module.

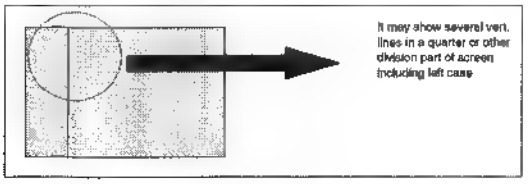

Figure 5-44 Screen display "Vertical lines"

One or Several Horizontal Lines on the Screen

1. It may be caused by:
   - Open or short on SCAN FPC attached panel.
   - Defect on SCAN IC attached panel.
2. Replace Y DRV board.

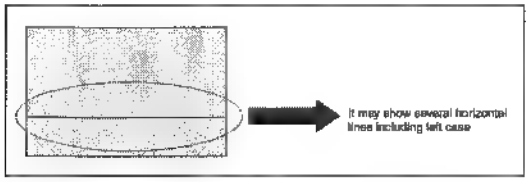

Figure 5-45 Screen display "Horizontal lines"

Low Brightness of Displayed Picture

1. In this case, Z board operation is not correct.
2. Check the power cord of Z board.
3. Check the connector of Z board and CTRL board.
4. Replace the CTRL board or Z board.

Partially Other Colour on Full White Screen or Partially Discharge on Full Black Screen.

1. Check the declination of Y board set-up and set-down wave.
2. Measure each output wave with oscilloscope (> 200 MHz) and compare the data with below figure data. Adjust the Y board Set_up (A) and Set_down (B) declination by changing VR1 and VR2 as written on the adjustment label.
   - Measuring Point of Y board: B39

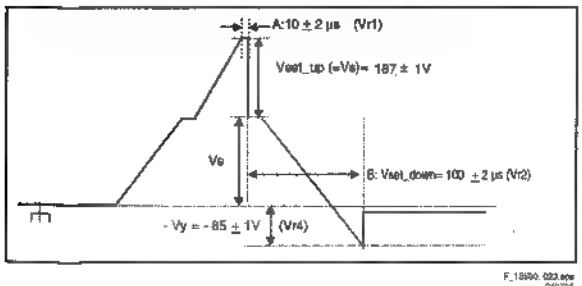

Figure 5-46 Y output voltage waveform

No Specified Brightness at Specified Colour

1. Check the connector of CTRL board input signal.
2. Replace the CTRL board.

5.2.3 Checking for Component Damage

Y IPM (IC 15) or Z IPM (IC 2)

When the internal Sustain_IGBT or ER_FET of Y IPM (IC15) or Z IPM (IC2) is damaged, VS fuse is open and there will be no picture.

- Test Point: B32-GND (Y board), B28-GND (Z board).
- Wave format: B32 (Y board) or B28 (Z board) has no output wave.
- Measure position: Sustain section, B32 wave of Y board and B28 wave of Z board (full white pattern).

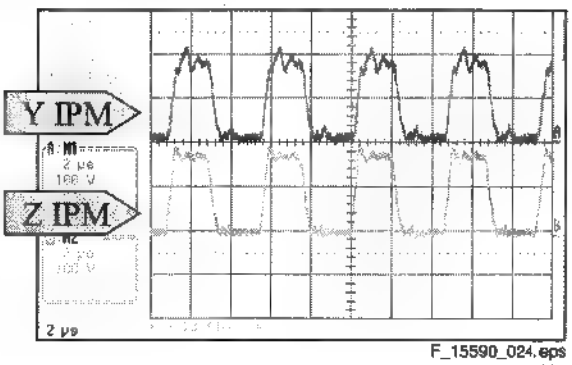

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Figure 5-47 IPM normal output

Pass_Top FET (Y board: HS2)

When the Pass_Top FET is damaged, electric discharge of the entire screen is generated.

- Test Point: GND-B32 (Y board)
- Wave format: When the Set_dn does not descend until -Vy.

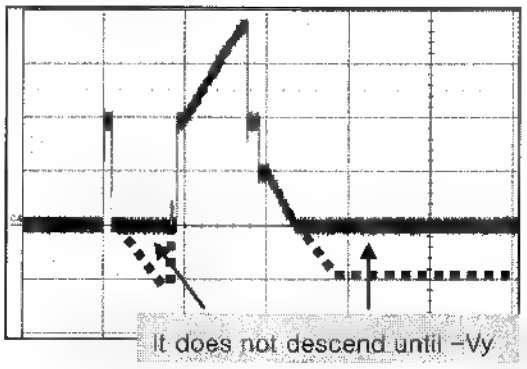

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Figure 5-48 Pass-Top FET defective

FET Assy (Y board: HS1)

When Set_Up FET is damaged, there will be no picture.

1. Test Point: GND-B32 (Y board)
   - Wave format: Set_up waveform is not generated.
2. When Set_Down FET is damaged, electric discharge of entire screen is generated.
   - Test Point: GND-B32 (Y board)
   - Wave format: Set_down waveform is not generated.
   - Measure position: Reset wave of B32 (Y board) (full white pattern)

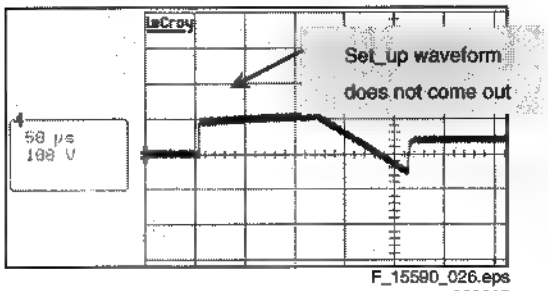


Figure 5-49 Set_Up FET defective

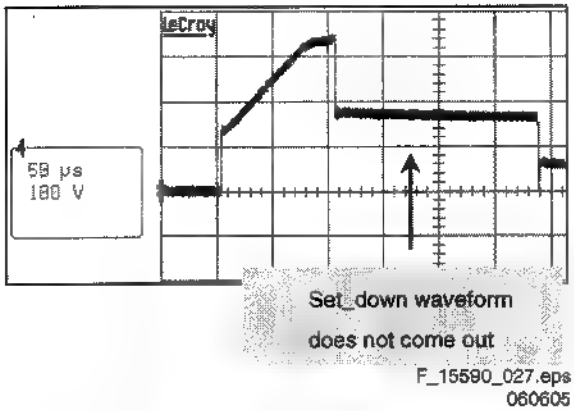


Figure 5-50 Set_Down FET defective

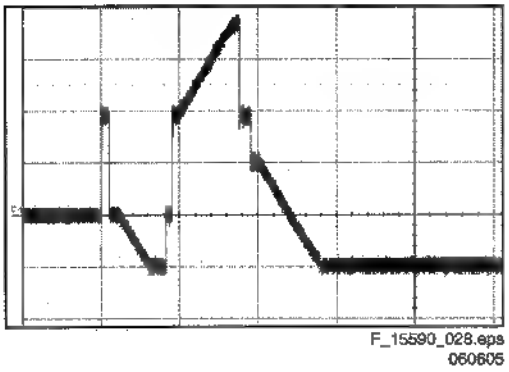


Figure 5-51 Reset section normal output

SCAN IC (Y-DRV board: IC1-8)

1. In case of the SCAN IC is damaged, one horizontal line may be open on the screen.
   - Test Point: ICT measurement of GND-Y DRV board output.
   - Wave format: As shown below figure.
2. When the SCAN IC is damaged (poor, external electricity, or spark), there might be no picture.
   - Test Point: ICT measurement of GND-Y DRV board output
   - Wave format: Output wave format is not generated (you can see if Y DRV board Top or Bottom's SCAN IC is damaged).
3. Screen shaked horizontally when Y DRV board Top and Bottom cable is damaged.
   - Test Point: ICT measurement of GND-Y DRV board output.
   - Wave format: As shown in figure "Y DRV board Top and Bottom cable damaged".
4. Overlap of two horizontal lines on the screen in case of shorted SCAN IC output.
   - Test Point: ICT measurement of GND-Y DRV board output.
   - Wave format: As shown in figures "SCAN IC shorted output" and "SCAN IC normal output".
   - Measurement point: SCAN section, output ICT of Y DRV board (full white pattern).

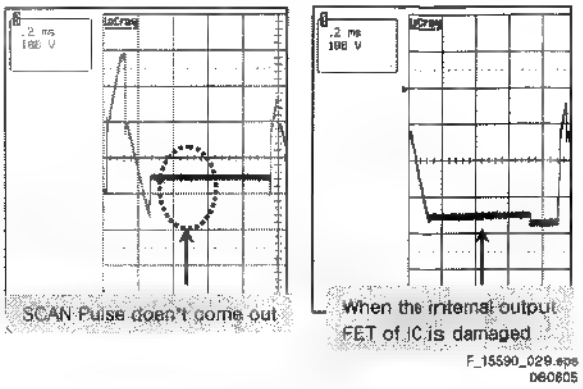


Figure 5-52 SCAN IC defective

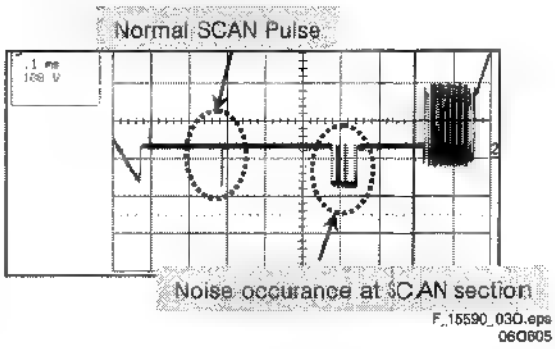


Figure 5-53 Y DRV board Top and Bottom cable damaged

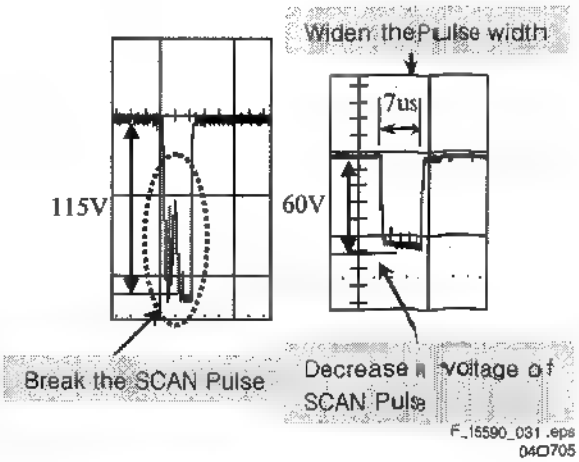


Figure 5-54 SCAN IC shorted output

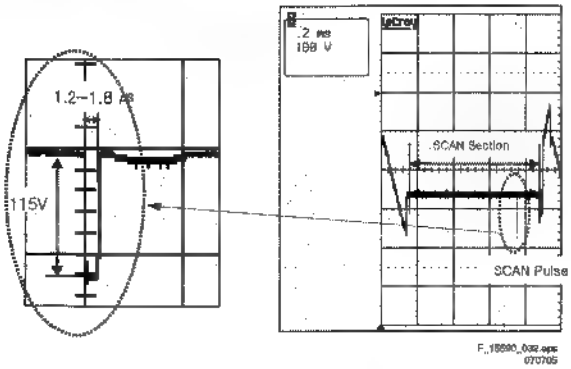


Figure 5-55 SCAN IC normal output

TCPs

1. In case of shorting or opening of TCP IC output, it may show one or several vertical lines.
   - Test Point: Output TP of GND-TCP
   - Wave format: As shown in figure below. In case of normal wave output, when STB signal is generated, the output must maintain "high". When STB signal is generated again, the output must fall to "low". But when the TCP IC is damaged, the STB signal is not generated, and the output falls to "low".
2. In case of ■ damaged TCP IC or power resistance, the screen is not shown or discharges partially.
   - Test Point: Output TP of GND-TCP
   - Wave format: Output wave is not generated.

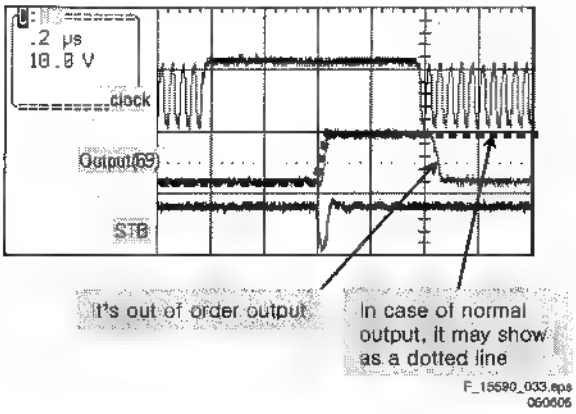


Figure 5-56 COF IC output defective

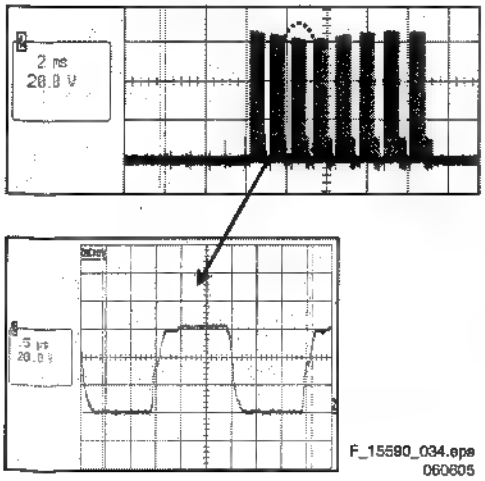


Figure 5-57 TCP normal output

Crystal (CTRL board: X1)

1. When a crystal is damaged, the screen is not shown.
   - Test Point: Measuring 3-pin of GND-Crystal (CTRL board: X1).
   - Wave format: Output wave is not generated.
2. In case of unusual start-up of the crystal, the screen may blink.
   - Wave format: As shown in figure below.
   - Measurement position: Measuring output 3-pin of crystal (X1: 100 MHz) on CTRL board (full white pattern).

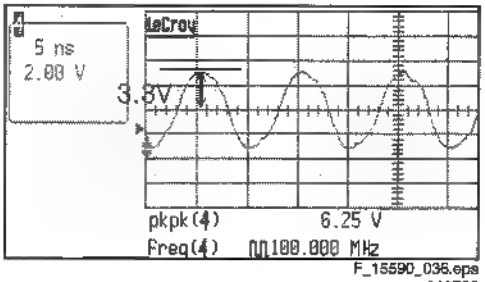


Figure 5-58 Crystal normal output

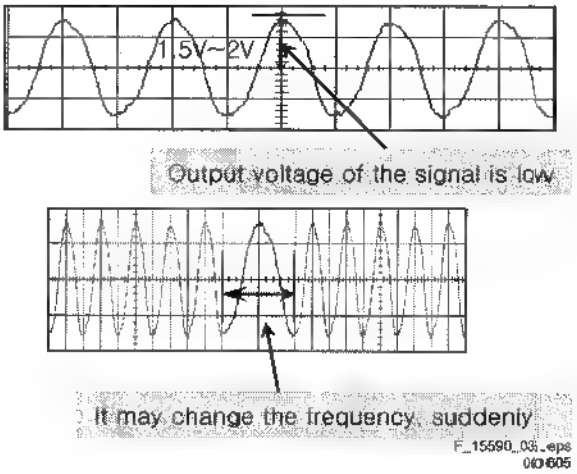


Figure 5-59 Crystal defective output

5.3 Detailed PSU Check PDP42V7*

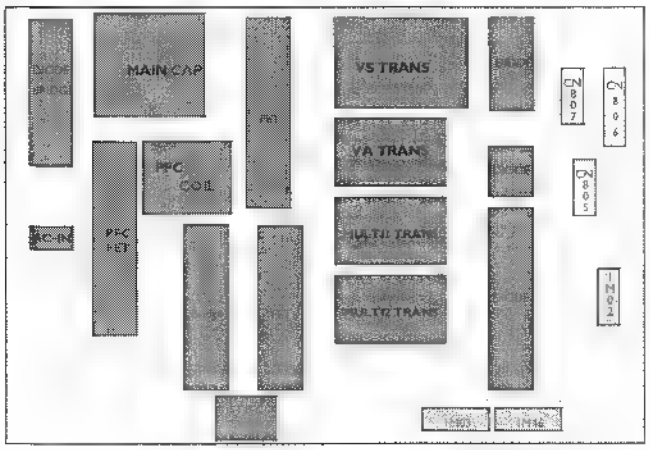


Figure 5-60 PSU top view

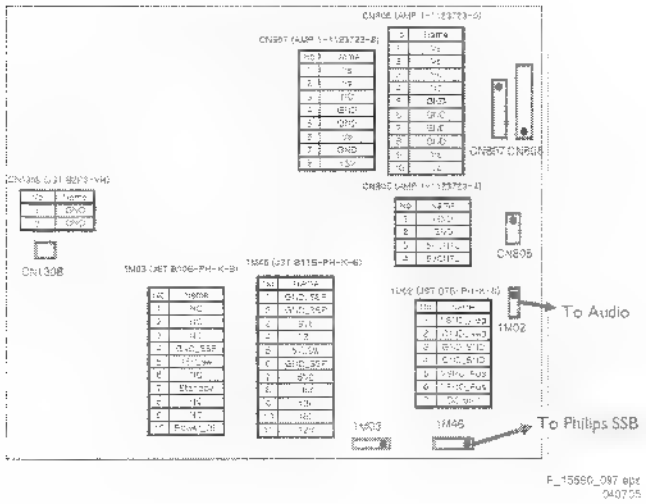


Figure 5-61 PSU Connector I/O pin assignment

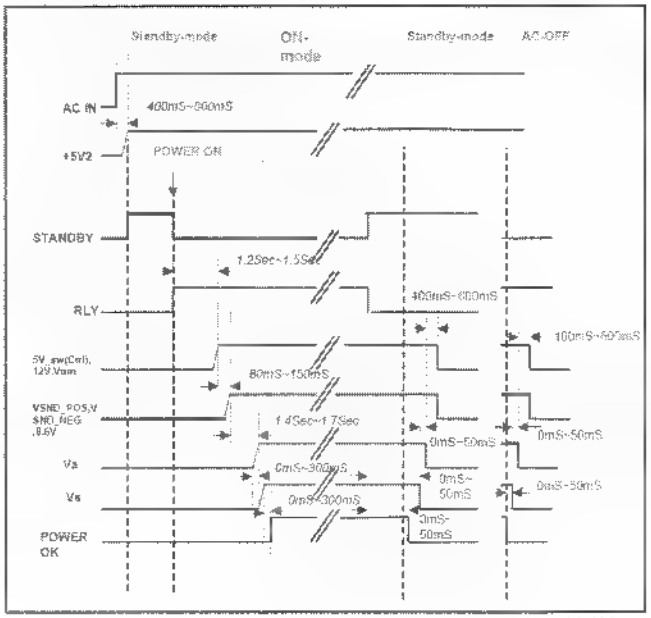


Figure 5-62 PSU "on/off" sequence in "Normal" mode

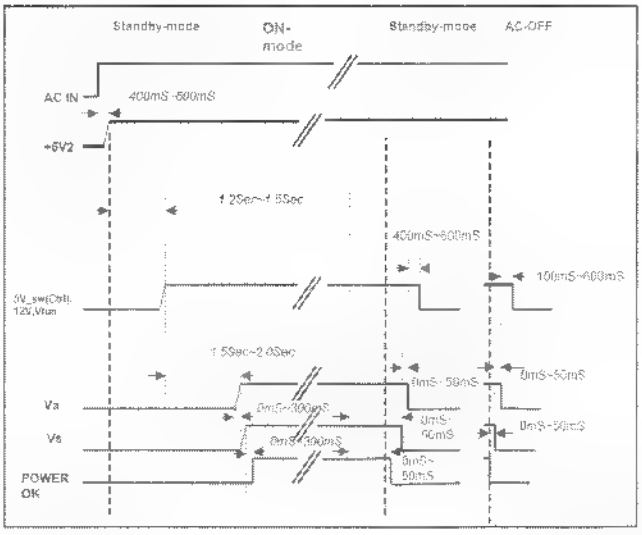


Figure 5-63 PSU "on/off" sequence in "Auto" mode

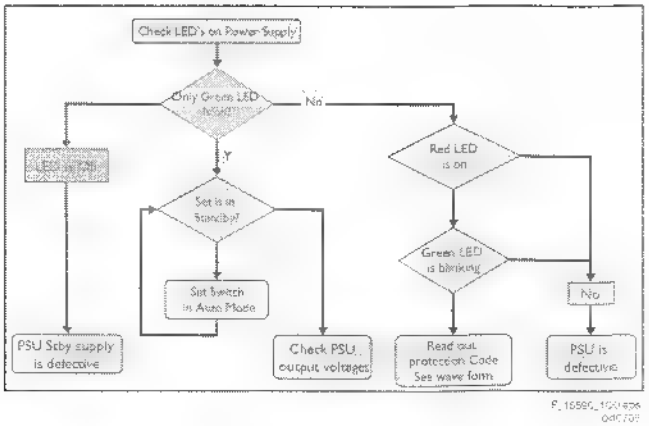


Figure 5-64 PSU Fault finding tree

5.3.1 No Display

1. Check whether the LED1 of the PSU is turned "on" or not.
2. Check the power and signal cables of the PSU.
3. Check the connection of the X board, Y board, and Z board to the Control board.
4. Replace the PSU
5. Check the output voltages of the PSU (Vcc= 5V, Va= 65V, Vs= 187V).
6. When 5V2 is not present, check whether the fuse is shorted or opened in AUTO/NORMAL mode.
7. When the PSU is in protection mode, check waveform and count of LED1 as shown in the figures below.

LED Count	OCP [Over Current Protection]	OVP [Over Voltage Protection]
Continuous flicker	LED OFF / LED ON	LED OFF / LED ON

*Time period : LED ON/OFF repeat an interval 200ms

F_15580_101.eps 040705

Figure 5-65 DC-port signal (1M02) protection

LED Count	OCP [Over Current Protection]	OVP [Over Voltage Protection]
2	LED OFF / LED ON, 480ms, 1.4Sec, Repeat	LED OFF / LED ON, 1.4Sec, 480ms, Repeat

F_15580_102.eps 040705

Figure 5-66 Vs output protection

LED Count	OCP [Over Current Protection]	OVP [Over Voltage Protection]
3	480ms, 1.4Sec, Repeat	480ms, LED OFF / LED ON, 1.4Sec, Repeat

F_15580_103.eps 040705

Figure 5-67 Va output protection

LED Count	OCP [Over Current Protection]	OVP [Over Voltage Protection]
4	480ms, 1.4Sec, Repeat	480ms, 1.4Sec, Repeat

F_15580_104.eps 040705

Figure 5-68 5V output circuit protection

LED Count	OCP [Over Current Protection]	OVP [Over Voltage Protection]
5	480ms, 1.4Sec, Repeat	480ms, 1.4Sec, Repeat

F_15580_105.eps 040705

Figure 5-69 12V and V_tun circuit protection

LED Count	OCP [Over Current Protection]	OVP [Over Voltage Protection]
6	480ms, 1.4Sec, Repeat	480ms, 1.4Sec, Repeat

F_15580_106.eps 040705

Figure 5-70 +18V circuit protection

LED Count	OCP [Over Current Protection]	OVP [Over Voltage Protection]
7	480ms, 1.4Sec, Repeat	480ms, 1.4Sec, Repeat

F_15580_107.eps 040705

Figure 5-71 +8V6 circuit protection

LED Count	OCP [Over Current Protection]	OVP [Over Voltage Protection]
8	480ms, 1.4Sec, Repeat	480ms, 1.4Sec, Repeat

F_15580_108.eps 040705

Figure 5-72 -18V circuit protection

LED Count	OCP [Over Current Protection]	OVP [Over Voltage Protection]
9		480ms, 1.4Sec, Repeat

F_15580_109.eps 040705

Figure 5-73 PFC circuit protection

5.4 Defect Description Form

This form must be used by the workshops for warranty claims:

DDF FLAT TV (panels & boards) version 1.1 — Date last modified: 08/03/2005

To be filled in by WORKSHOP / WORK CENTER

Country:	Philips	Type nr./Model nr. set	
		Serial nr. set	
Customer Account nr.:	LCD & Plasma	Type nr. display	
	DEFECT DESCRIPTION	Serial nr. display	
Job sheet nr.:	FORM	Part nr display (12nc)	
		Return number	0170 _ _ _ _ _ _

GENERAL REPAIR DATA

Condition	❒ Constantly	❒ In a hot environment
	❒ Intermittently	❒ In a cold environment
	❒ After a while	❒ Other : .....
Symptom(s)	❒ No backlight	❒ Flickering / flashing picture
	❒ No picture	❒ Lines across/down image
	❒ Picture too bright	❒ Inactive row(s)
	❒ Shading / smearing on picture	❒ Inactive column(s)
	❒ Only partial picture	❒ Missing colour(s)
	❒ Unstabel picture	❒ Other: .....

PANEL REPAIR

Pixel Defect(s):	❒ Dark dots ❒ Bright dots	Qty of dots :	Mark Defect(s)	---------- Picture ---------- Insert picture or mark defect !
Symptoms Out of warranty	Following defect symptoms are out of warranty: • Broken glass • Scratch(es) on display • Number of dark/bright pixels within spec. • Burn in (only for Plasma TV)			These symptoms are not claimable

BOARD REPAIR

For Plasma TV repair only

	Spare Part Nr. New Board	Barcode Nr. Defect Board	Barcode Nr. Replaced Board
1.			
2.			
3.			
4.			

To be filled in by EUROSERVICE	RMA number:	Date of receipt:

Note 1: The defective LCD-panel / PDP needs to be returned in the same packaging as the new part was send.If not the warranty claim will be rejected.

Note 2: Please fill out this form completely and correctly, otherwise Euroservice is unable to fulfil the repair request!

Owner: PHILIPS CE EUROSERVICE — DE10WEG

F_55 d30_115.tpe 110705

Figure 5-74 Defect Description Form (DDF)

6. Block Diagrams, Test Point Overviews, and Waveforms

Not applicable

7. Circuit Diagrams and PWB Layouts

Not applicable

8. Alignments

Index of this chapter:

8.1 General
8.2 Alignment PDP42V7*

8.1 General

Notes:

1. Allow the set to warm up according conditions below for at least 10 minutes before adjusting.
   - Service signal: 100% Full White.
   - Service DC voltage: Vcc= 5 V, Va= 65 V, Vs= 187 V.
   - DC/DC Pack voltage: Vsc= 115 V, -Vy= -85V
   - Preliminaries environment: Temp (25 ± 5 deg. C), Relative Humidity (65 ± 10%).
2. Module adjustment should follow below sequence.
   - First, set up the Vsc / -Vy voltage (Vsc= 115 V, -Vy= -85 V).
   - Then, adjust the voltage waveform (refer to adjustment).

Caution: Do not leave a still image for more than 10 minutes (especially The Digital pattern or Cross Hatch Pattern which has clear gradation) on the display, because this will cause burn-in effects.

8.2 Alignment PDP42V7*

8.2.1 Connection Diagram and Set-Up

1. For the connection diagram of the measuring instrument, refer to Fig. "Measuring equipment connection diagram".
2. Set-up the initial voltage (voltage label) Vcc= 5 V, Va= 65 V, Vs= 187 V. Note that the initial set-up voltage can be changed according to the module's characteristic.

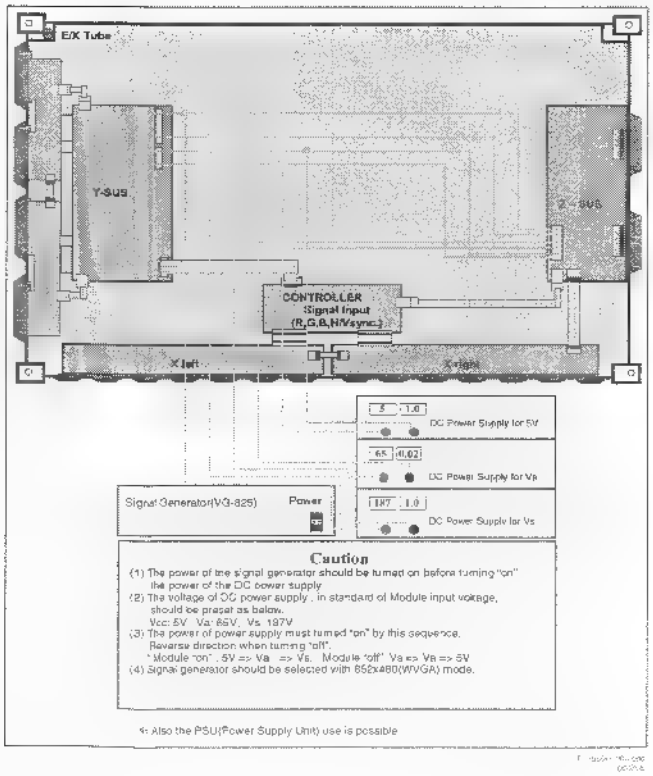


Figure 8-1 Measuring equipment connection diagram

8.2.2 Tools

1. Digital oscilloscope: > 200 MHz.
2. DVM (Digital Multimeter): Fluke 87 or similar.
3. Signal generator: VG-825 or similar.
4. DC power supply or PSU:
   - DC power supply for Vs (1): 0 - 200 V, > 10 A.
   - DC power supply for Va (1): 0 - 100 V, > 5 A.
   - DC power supply for 5V (1): 0 - 10 V, > 10 A.
   - DC/DC converter jig (1): The jig with an equivalent voltage output of PDP42V7#### module after taking the Vs, Va, and 5V voltage.
   - Voltage stability of power supply: Within ± 1% for Vs and Va, within ± 3% for 5V.

8.2.3 Alignments

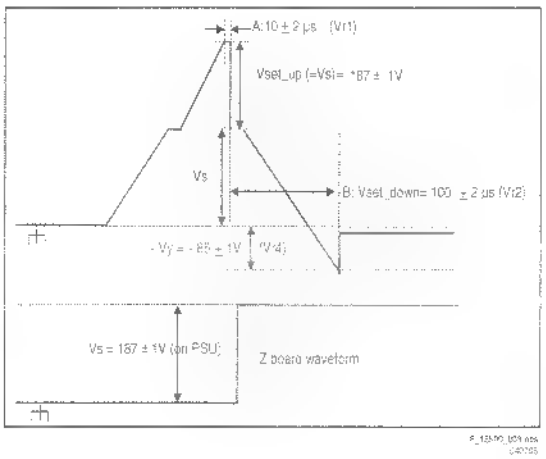


Figure 8-2 Y, Z set-up waveform

Vset-up Alignment

Adjusting **Vset-up** voltage wave form:

1. Connect the measuring instruments according to Fig. "Measuring equipment connection diagram".
2. Turn on the measuring instruments with "Caution" of Fig. "Measuring equipment connection diagram".
3. Connect the oscilloscope probe to B39 (Bead) of Y board bottom and GND.
4. Turn the VR1 on the Y board, and make the "A" waveform according to Fig. " Y, Z set-up waveform " to be 10 ± 2 µs.

Vset-down Alignment

Adjusting **Vset-down** voltage wave form:

1. Turn the VR2 on the YSUS board and make the "B" waveform according to Fig. " Y, Z set-up waveform " to be 100 ± 2 µs.

DC/DC Pack Voltage Alignment

Checking the **DC/DC Pack** voltage:

1. Convert the signal of the signal generator to a 100% Full White signal.
2. Connect the GND terminal of the DVM to the right leg of R53 on the Y board, and set the Plus terminal to the left leg of R53 to check the Vsc voltage (115 ± 1 V) and when there is abnormality in the voltage, turn the variable resistor (VR3) of DC/DC Pack (Vsc) PS1 on the Y board to adjust.
3. Connect the GND terminal of the DVM to the right leg of R78 on the Y board and set the Plus terminal to the left leg of R78 to check the -Vy voltage (-85 ± 1 V) and when there is abnormality in voltage turn the variable resistor (VR4) of the DC/DC Pack (-Vy) PS1 on the Y board to adjust.

Vs Alignment on PSU

This describes the Vs alignment on the PSU:

1. Set the switch on the PSU to "AUTO".
2. Connect Mains/AC Power (from Mains Filter) to the PSU board (CN1308).
3. Connect a multimeter between CN06-Vs and ground (e.g. frame).
4. Align Vs with the upper potmeter (VR501) to:
   - 184 V for the PDP42V7**A062** and PDP42V7**K062** models (different from label !).
   - 187 V for the other V7 models (as printed on label).
5. Set the switch on the PSU back to "NORMAL".

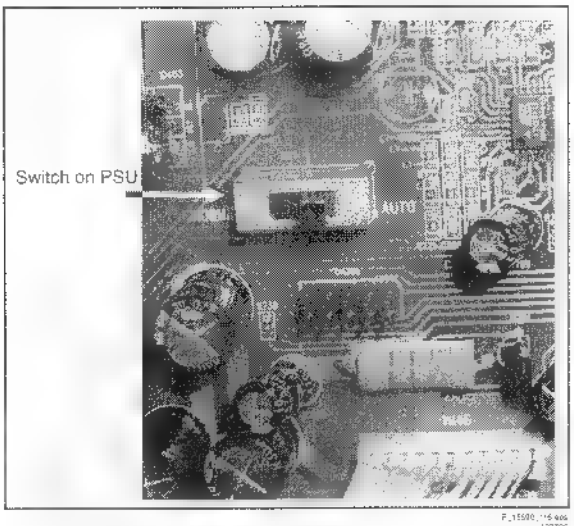


Figure 8-3 Switch setting (Vs alignment step 1)

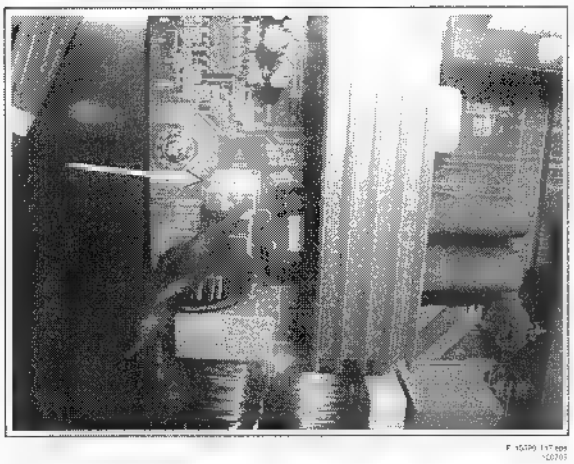


Figure 8-4 Connect Mains (Vs alignment step 2)

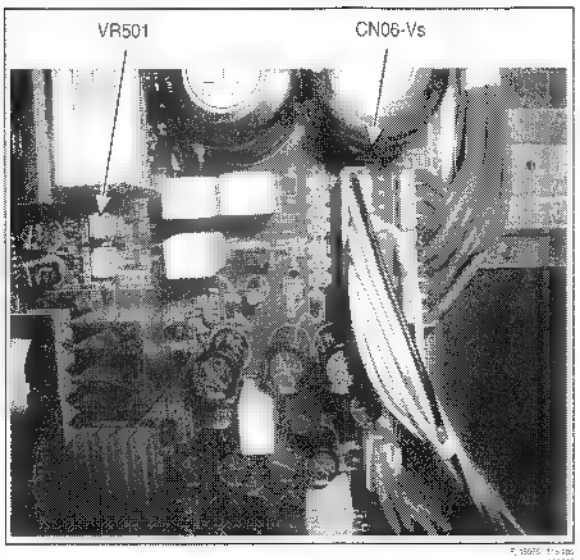


Figure 8-5 Vs measure and alignment point (step 3 &4)

8.2.4 Internal Test Patterns

The CTRL board is capable of generating it's own video test patterns. There are two possibilities, both based on R406 and R407:

- R406 is open and R407 is fitted (= standard setting): the test pattern is a full black screen (**very low** light output).
- R406 is fitted and R407 is open (desolder R407 and mount it on pos. R406): the test patterns are shown in an automatic loop.

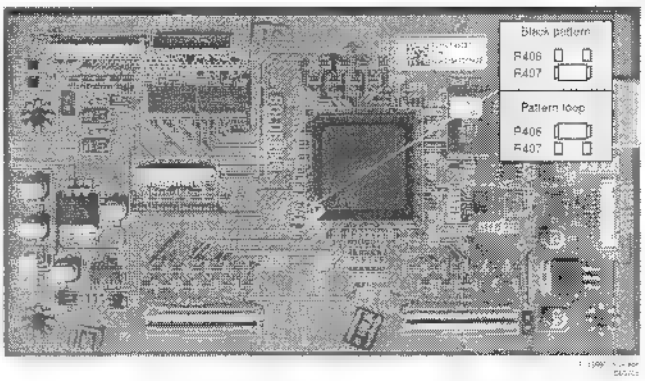


Figure 8-6 Internal test pattern mode

9. Circuit Descriptions, Abbreviation List, and IC Data Sheets

Index of this chapter:

9.1 X Board
9.2 Z Sustain Board
9.3 Y Drive Board
9.4 Y Sustain Board
9.5 Control Board
9.6 DC/DC Converter Part
9.7 FPC (Flexible Printed Circuit)
9.8 FFC (Flat Flexible Cable)
9.9 TCP (Tape Carrier Package)
9.10 IPM (Intelligent Power Module)
9.11 Abbreviation List
9.12 IC Data Sheets

9.1 X Board

9.1.1 Purpose

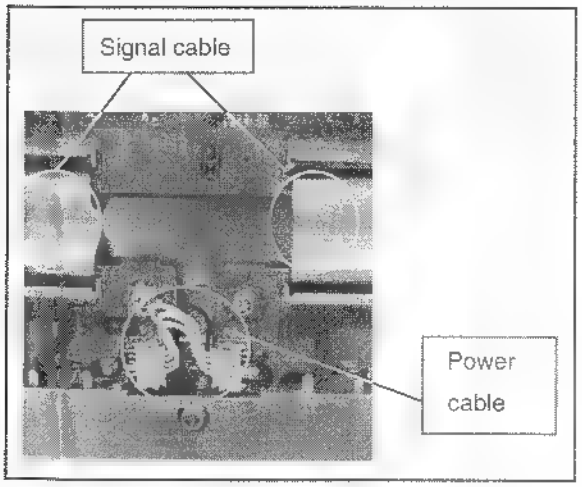
Receiving LOGIC signal from the CONTROL board and make ADDRESS PULSE (generates Address discharge) by ON/OFF operation, and then supplies this waveform to TCP (data).

F_15590_048.eps
040705

Figure 9-1 X boards

9.1.2 Dismantling

1. Remove connections between the boards:



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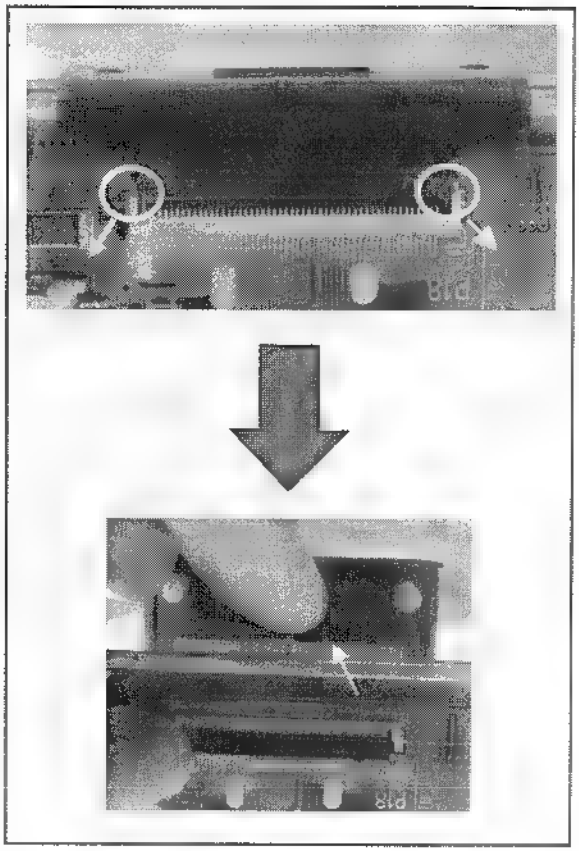
070705

Figure 9-2 Between CONTROL board and X board

1. Lift up lock as indicated by the arrows (handle with care, as this part is easy to break).
2. Pull TCP as indicated (handle with care, as the TCP film part is easy to damage).



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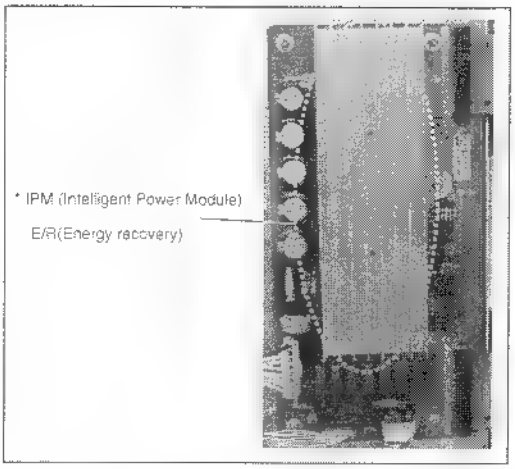
040705

Figure 9-3 TCP Separating

9.2 Z Sustain Board

9.2.1 Purpose

To make the SUSTAIN and ERASE pulses that generates SUSTAIN discharge in the panel by receiving LOGIC signal from
CONTROL board. This waveform is then supplied to the panel through FPC (Z).



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040705

Figure 9-4 Z Sustain Board

9.2.2 Main Components

IPM, FET, DIODE, electrolytic capacitor, and E/R coil.

9.2.3 Dismantling

1. Pull out Locks as indicated by the arrows.
2. Condition in Lock part is pulled.
3. Pull FPC as shown by arrow.

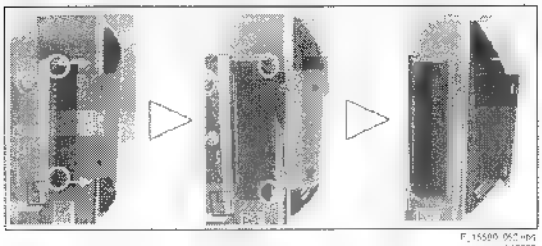

Figure 9-5 FPC Separating

9.3 Y Drive Board

9.3.1 Purpose

- To supply SUSTAIN, RESET waveform which are made by the Y SUSTAIN board and are supplied to the PDP through the SCAN DRIVER IC.
- To supply a waveform that selects the horizontal electrode (Y SUSTAIN electrode) sequentially.
  - Potential difference is 0 V between GND and Vpp of DRIVER IC in SUSTAIN period.
  - Being generated potential difference between GND and Vpp only in SCAN period.

Note: In case of 42" V7, used DRIVER SCAN ICs are in total of 8 EA (TOP, BOTTOM: each 4 EA).

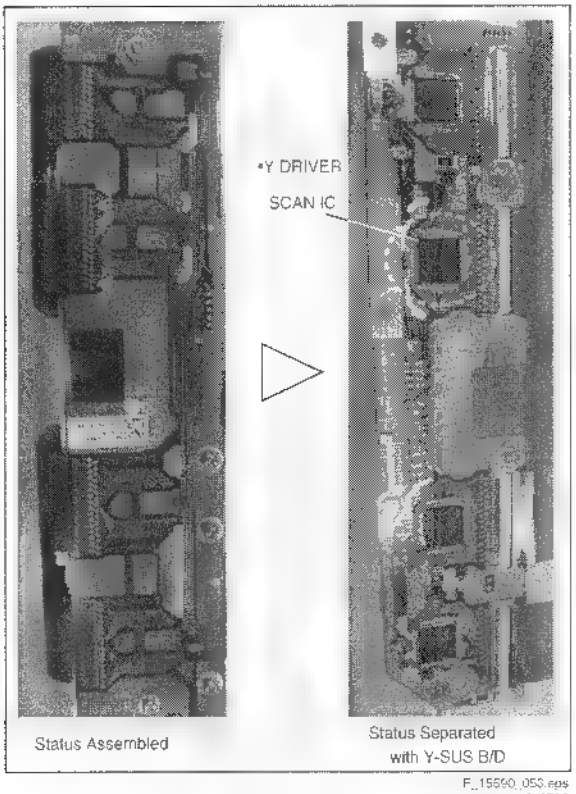

Figure 9-6 Y Drive board

9.4 Y Sustain Board

9.4.1 Purpose

Generates SUSTAIN, RESET, and Vsc (SCAN) voltages, and supplies them to the Y DRIVE board.

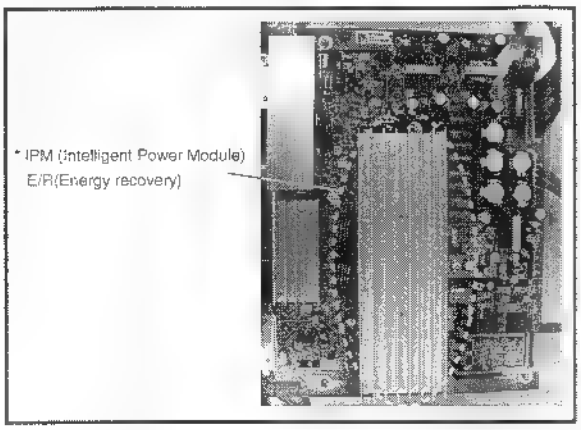

Figure 9-7 Y Sustain board

9.4.2 Main Components

IPM, diode, electrolytic capacitor, and FET.

9.5 Control Board

9.5.1 Purpose

Creates signal processing, and controls many FET on each DRIVER board with R, G, and B signals.
Firstly receive 5 V, and then use two voltages (3.3 V / 1.8 V).

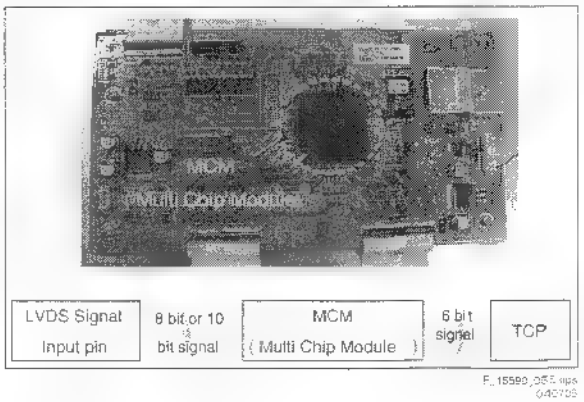

Figure 9-8 Control board

9.6 DC/DC Converter Part

9.6.1 Purpose

From 5V, Vs, and Va (from PSU), the DC/DC converter makes 5V, 15V, Vy, Vsc, 5Vf, and Va, which are essential for each board.

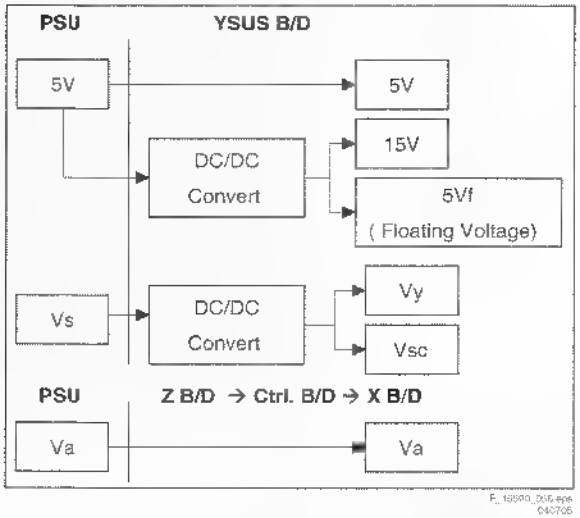

Figure 9-9 DC/DC Converter block diagram

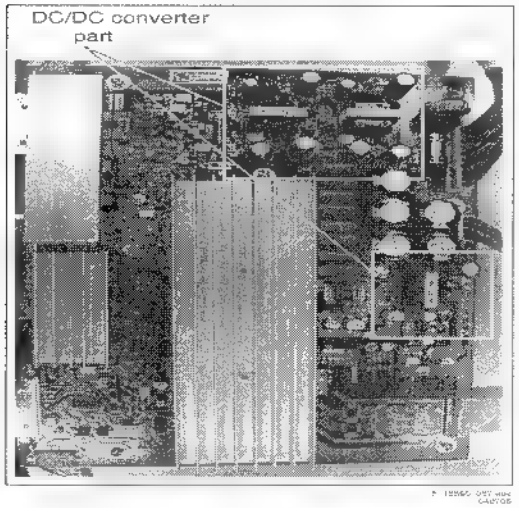

Figure 9-10 DC/DC Converter part

9.7 FPC (Flexible Printed Circuit)

9.7.1 Purpose

To supply a driving waveform to the PDP by connecting a PAD electrode of the PDP with a PWB (Y and Z boards).

- There are two types of this for the Y board: One is single-sided; the other is double-sided (these have a pattern on it).
- For Z board there is no pattern, single-sided, and Beta type (all of copper surface).

Figure 9-11 Flexible Printed Circuit

9.8 FFC (Flat Flexible Cable)

9.8.1 Purpose

For connecting LOGIC signals between boards. There are two types

- 0.5 mm pitch, 50-pin type.
- 0.5 mm pitch, 60-pin type.

Figure 9-12 Flat Flexible Cable

9.9 TCP (Tape Carrier Package)

9.9.1 Purpose

To supply a waveform which is made by the X board to the PDP, and to select an output pin that is controlled by TCP when "on" or "off" (192 output pins per IC).

- TCP is package type, which is made by Direct Bonding between IC and electrode film.
- It is more effective than Wire Bonding type by increasing number of Data Driver IC output pins (96-pin -> 192-pins, pitch < 80 μm).

Figure 9-13 Tape Carrier Package

9.10 IPM (Intelligent Power Module)

9.10.1 Purpose

Attached at Z board and Y board, to make Sustain waveform.
Sustainer: supply a square wave to the PDP to make video.

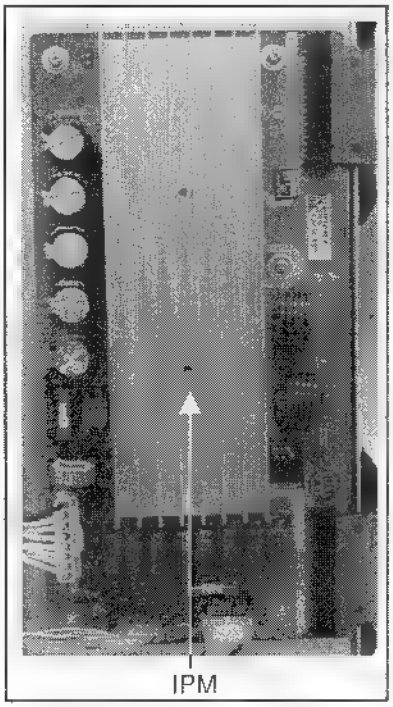

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Figure 9-14 Intelligent Power Module

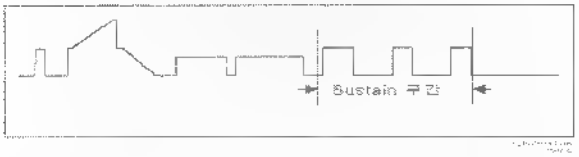


Figure 9-15 Sustain pulse (061)

9.10.2 Main Components

Heatsink, capacitor, diode, IC, resistor, transistor, and FET.

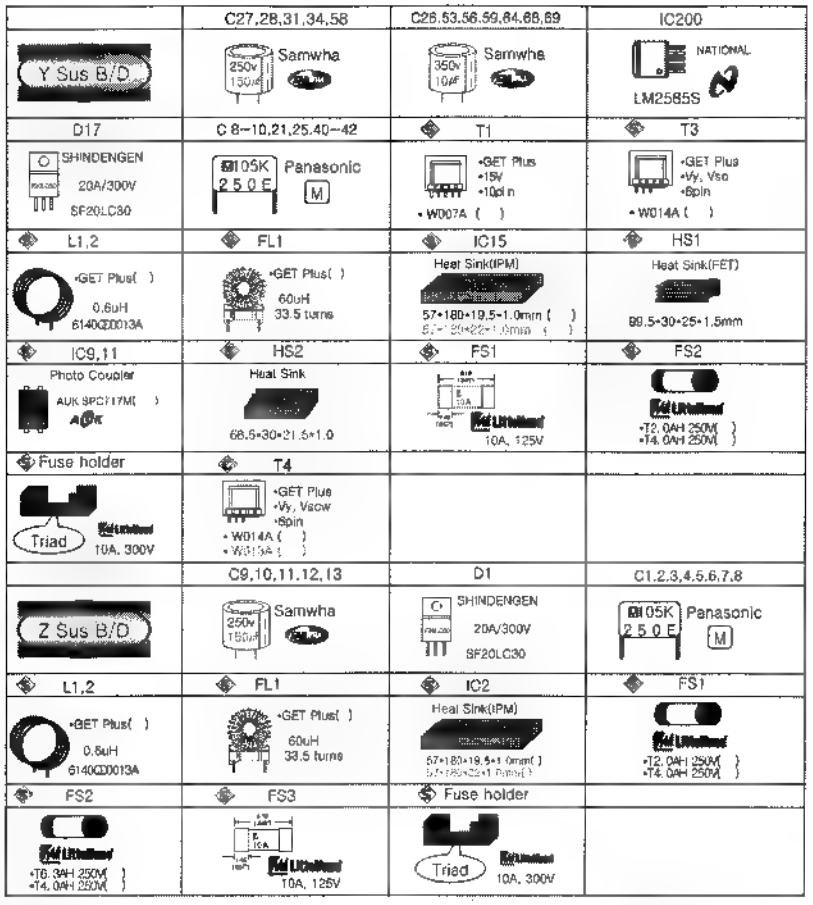
9.11 Abbreviation List

AC	Alternating Current
B/D	Board
CLK	Clock signal
CTRL	Control (board)
DC	Direct Current
FET	Field Effect Transistor
FPC	Flexible Printed Circuit
I/O	Input/Output
IC	Integrated Circuit
IPM	Intelligent Power Module
LED	Light Emitting Diode
LGE	Lucky Goldstar Electronics (supplier)
MCM	Multi Chip Module
PCB	Printed Circuit Board (same as PWB)
PDP	Plasma Display Panel
PFC	Power Factor Corrector circuit
PSU	Power Supply Unit
PWB	Printed Wiring Board (same as PCB)
RGB	Red, Green, Blue colour space
STB	Stand-by signal
TCP	Tape Carrier Package

9.12 IC Data Sheets

Not applicable

10. Spare Parts List



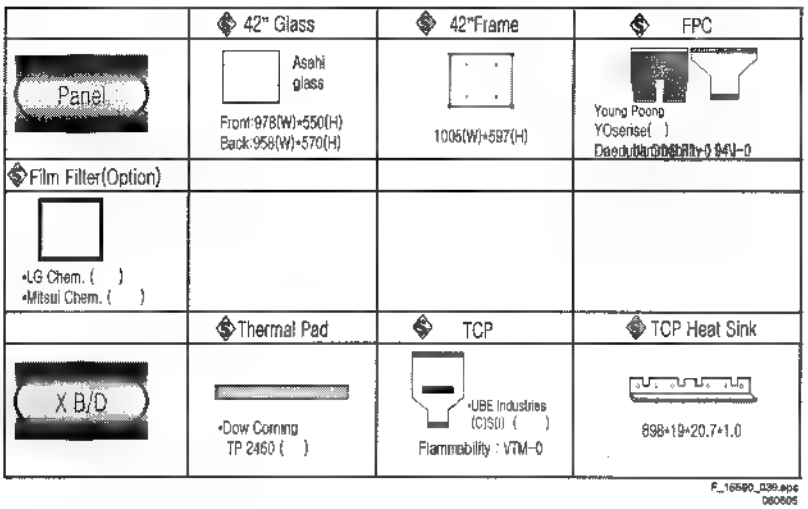


Figure 10-1 Safety component overview (for information purpose only, parts cannot be ordered!)

Plasma Module PDP42V7****

Various

S001	9965 000 27808	CONTROL board
S002	9965 000 27809	Y-DRIVE TOP board
S003	9965 000 27810	Y-DRIVE BTM board
S004	9965 000 27811	X-LEFT board
S005	9965 000 27812	X-RIGHT board
S006	9965 000 27813	Y-SUS board
S007	9965 000 27814	Z-SUS board
S008	9965 000 27815	PSU board
S009	9965 000 29871	Conn. assy 10P PSU=>Y-SUS
S010	9965 000 29872	Conn. assy 8P PSU=>Z-SUS
S011	9965 000 29873	Conn. assy 4P PSU=>Y-SUS

11. Revision List

Manual xxxx xxx xxxx.0

- First release.

Colour Television

Chassis

LC4.9E

AB

Service
Service
Service

For manual LGE plasma panel see: 3122 785 15590

Service Manual

Contents		Page	
1. Technical Specifications, Connections, and Chassis Overview		2	
2. Safety Instructions, Warnings, and Notes		5	
3. Directions for Use		7	
4. Mechanical Instructions		8	
5. Service Modes, Error Codes, and Fault Finding		11	
6. *Block Diagrams, Testpoint Overviews, and Waveforms*			
Wiring Diagram		21	
Block Diagram Supply		22	
Block Diagram Video		23	
Block Diagram Audio		24	
Testpoint Overview SSB (Top Side)		25	
Block Diagram IBO Zapper		26	
Testpoint Overview IBO Zapper (Bottom Side)		27	
I2C Overview		28	
Supply Voltage Overview		29	
7. *Circuit Diagrams and PWB Layouts*		*Diagram*	*PWB*
PDP FHP Supply: Filter Standby	(A2)	30	35-40
PDP FHP Supply: Protection	(A3)	31	35-40
PDP FHP Supply: Pre Conditioner	(A5)	32	35-40
PDP FHP Supply: LLC Supply	(A6)	33	35-40
PDP FHP Supply: AUX Supply	(A7)	34	35-40
SSB: Tuner and IF(B1)		41	64-73
SSB: Hercules	(B2)	42	64-73
SSB: Sync Interface	(B3)	43	64-73
SSB: Audio Delay line (Reserved)	(B4)	44	64-73
SSB: Audio Processing	(B5)	45	64-73
SSB: DC-DC Converter	(B6)	46	64-73
SSB: Diversity Tables B1-B6	(B1-6)	47	
SSB: Scaler	(B7)	48	64-73
SSB: Scaler Supply	(B8)	49	64-73
SSB: Scaler Interface	(B9)	50	64-73
SSB: SDRAM	(B10)	51	64-73

Contents		Page	
SSB: Flash / Control	(B11)	52	64-73
SSB: HDMI (N.A.)	(B12)	53	64-73
SSB: MUX Sync Interface	(B13)	54	64-73
SSB: Digital I/O	(B14)	55	64-73
SSB: Analog I/O	(B15)	56	64-73
SSB: Top Connectors	(B16)	57	64-73
SSB: Side Connectors	(B17)	58	64-73
SSB: ADC	(B18)	59	64-73
SSB: Columbus	(B19)	60	64-73
SSB: EPLD	(B20)	61	64-73
SSB: EPLD	(B21)	62	64-73
SSB: Diversity Tables B9-B21	(B9-21)	63	
PDP Audio Amplifier Panel	(C)	74	75
Side I/O Panel	(D)	76	75
Control Board	(E)	78	79
LED Panel	(J)	80	81
IBO Zapper: Mojo	(K1)	82	89-90
IBO Zapper: Flash Memory	(K2)	83	89-90
IBO Zapper: Power Supply	(K3)	84	89-90
IBO Zapper: Interface	(K4)	85	89-90
IBO Zapper: Analog Back End	(K5)	86	89-90
IBO Zapper: Front End	(K6)	87	89-90
IBO Zapper: Common Interface	(K7)	88	89-90
8. Alignments		91	
9. Circuit Descriptions, Abbreviation List, and IC Data Sheets		95	
Abbreviation List		97	
IC Data Sheets		100	
10. Spare Parts List		102	
11. Revision List		112	

Published by BB 0570 TV Service

Subject to modification EN 3122 785 15671

PHILIPS

1. Technical Specifications, Connections, and Chassis Overview

Index of this chapter:

1.1 Technical Specifications
1.2 Connection Overview
1.3 Chassis Overview

Notes:

- Figures can deviate due to the different set executions.
- Specifications are indicative (subject to change).

1.1 Technical Specifications

1.1.1 Vision

Display type	: Plasma
Screen size	: 42" (107 cm), 16:9
Resolution (HxV pixels)	: 852 x 480
Contrast ratio	:
- 42PF5520D/10	: 10,000:1
- 42PF7520D/10	: 13,000:1
Light output (cd/m^2)	: 1500
Viewing angle (HxV degrees)	: 160x160
Tuning system	: PLL
Reception standards	: Analogue &
	: digital terrestrial TV
	: (DVB-T)
TV Colour systems	: PAL B/G, D/K, I
	: SECAM B/G, D/K, L/L'
Video playback	: PAL B/G; SECAM L/L'
	: NTSC M/N 3.58, 4.43
Supported computer formats	: VGA (640x480)
	: VGA (720x400)
	: VGA (720x480)
	: MAC (640x480)
	: MAC (832x624)
	: SVGA (800x600)
	: XVGA (1024x768)
	: WXGA (1280x768)
	: WXGA (1280x960)
	: WXGA (1280x1024)
Supported video formats	: 640x480i - 1fH
	: 720x576i - 1fH
	: 640x480p - 2fH
	: 720x576p - 2fH
	: 852x480p - 2fH
	: 1920x1080i - 2fH
Presets/channels	: 100 presets
Tuner bands	: VHF
	: UHF
	: S-band
	: Hyper-band

1.1.2 Sound

Sound systems	: FM-mono
	: FM-stereo B/G
	: NICAM B/G, D/K, I, L
	: AV Stereo
Maximum power (W_{RMS})	: 2 x 15

1.1.3 Miscellaneous

Power supply:	
- Mains voltage (V_{AC})	: 220 - 240
- Mains frequency (Hz)	: 50 / 60
Ambient conditions:	
- Temperature range (°C)	: +5 to +40
- Maximum humidity	: 90% R.H.
Power consumption	
- Normal operation (W)	: ≈ 450
- Stand-by (W)	: < 2
Dimensions (WxHxD cm)	: 124x68x10.4
Weight (kg)	: 42

1.2 Connection Overview

Note: The following connector colour abbreviations are used (acc. to DIN/IEC 757): Bk= Black, Bu= Blue, Gn= Green, Gy= Grey, Rd= Red, Wh= White, and Ye= Yellow.

1.2.1 Side I/O connections

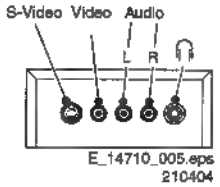


Figure 1-1 Side I/O connections

S-Video (Hosiden): Video Y/C - In

1	- Ground Y	Gnd
2	- Ground C	Gnd
3	- Video Y	1 V_{PP} / 75 ohm
4	- Video C	0.3 V_{PP} / 75 ohm

Cinch: Video CVBS - In, Audio - In

Ye	- Video CVBS	1 V_{PP} / 75 ohm
Wh	- Audio L	0.5 V_{RMS} / 10 kohm
Rd	- Audio R	0.5 V_{RMS} / 10 kohm

Mini Jack: Audio Head phone - Out

Bk	- Head phone	32 - 600 ohm / 10 mW

1.2.2 Rear Connections

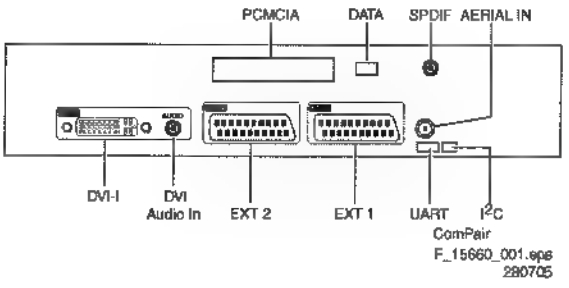


Figure 1-2 Rear I/O

Aerial - In

-	- IEC-type (EU)	Coax, 75 ohm

Mini Jack: Audio - In

1	- Ground	Gnd
2	- Audio L	0.5 V_{RMS} / 10 kohm
3	- Audio R	0.5 V_{RMS} / 10 kohm

Service connector (ComPair)

1	- SDA-S	I^2C Data (0 - 5 V)

1.3 Chassis Overview

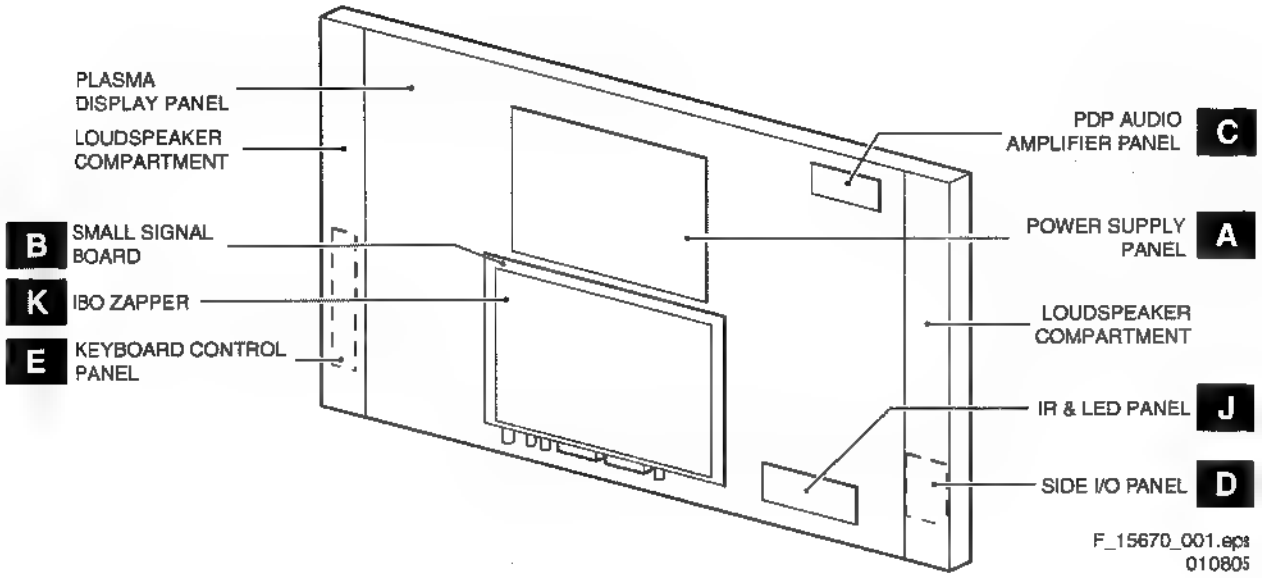


Figure 1-6 PWB locations

2	- SCL-S	I^2C Clock (0 - 5 V)	
3	- Ground	Gnd	

Service connector (UART)

1	- UART_TX	Transmit	
2	- Ground	Gnd	
3	- UART_RX	Receive	

DVI-I: Digital/Analogue Video - In

Figure 1-3 DVI-I connector

1	- D2-		
2	- D2+		
3	- Shield	Gnd	
4	- D4-		
5	- D4+		
6	- DDC_SCL	DDC clock	
7	- DDC_SDA	DDC data	
8	- V-sync	0 - 5 V	
9	- D1-		
10	- D1+		
11	- Shield	Gnd	
12	- D3-		
13	- D3+		
14	- +5V		
15	- Ground	Gnd	
16	- HPD	Hot Plug Detect	
17	- D0-		
18	- D0+		
19	- Shield	Gnd	
20	- D5-		
21	- D5+		
22	- Shield	Gnd	
23	- CLK+		
24	- CLK-		
C1	- Video Red	0.7 V_{PP} / 75 ohm	
C2	- Video Green	0.7 V_{PP} / 75 ohm	
C3	- Video Blue	0.7 V_{PP} / 75 ohm	
C4	- H-sync	0 - 5 V	
C5	- Ground	Gnd	

EXT1: Video RGB - In, CVBS - In/Out, Audio - In/Out

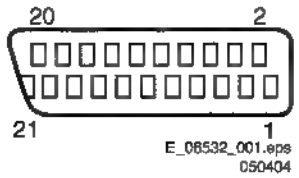


Figure 1-4 SCART connector

1	- Audio R	0.5 V_{RMS} / 1 kohm	
2	- Audio R	0.5 V_{RMS} / 10 kohm	
3	- Audio L	0.5 V_{RMS} / 1 kohm	
4	- Ground Audio	Gnd	
5	- Ground Blue	Gnd	
6	- Audio L	0.5 V_{RMS} / 10 kohm	
7	- Video Blue	0.7 V_{PP} / 75 ohm	
8	- Function Select	0 - 2 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	- Ground Green	Gnd	
10	- n.c.		
11	- Video Green	0.7 V_{PP} / 75 ohm	
12	- n.c.		
13	- Ground Red	Gnd	
14	- Ground	Gnd	
15	- Video Red	0.7 V_{PP} / 75 ohm	
16	- Status/FBL	0 - 0.4 V: INT 1 - 3 V: EXT / 75 ohm	
17	- Ground Video	Gnd	
18	- Ground FBL	Gnd	
19	- Video Terr. CVBS	1 V_{PP} / 75 ohm	
20	- Video CVBS/Y	1 V_{PP} / 75 ohm	
21	- Shield	Gnd	

EXT2: Video Y/C - In, CVBS - In/Out, Audio - In/Out

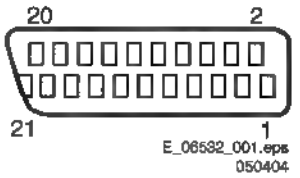


Figure 1-5 SCART connector

1	- Audio R	0.5 V_{RMS} / 1 kohm	
2	- Audio R	0.5 V_{RMS} / 10 kohm	
3	- Audio L	0.5 V_{RMS} / 1 kohm	
4	- Ground Audio	Gnd	
5	- Ground Blue	Gnd	
6	- Audio L	0.5 V_{RMS} / 10 kohm	
7	- n.c.		
8	- Function Select	0 - 2 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	- Ground Green	Gnd	
10	- n.c.		
11	- n.c.		
12	- n.c.		
13	- Ground Red	Gnd	
14	- Ground	Gnd	
15	- YC/C - in	0.7 V_{PP} / 75 ohm	
16	- n.c.		
17	- Ground Video	Gnd	
18	- Ground	Gnd	
19	- Video Mon. CVBS	1 V_{PP} / 75 ohm	
20	- YC/Y - in	0.7 V_{PP} / 75 ohm	
21	- Shield	Gnd	

2. Safety Instructions, Warnings, and Notes

Index of this chapter:

2.1 Safety Instructions
2.2 Warnings
2.3 Notes

2.1 Safety Instructions

Safety regulations require the following **during** a repair:

- Connect the set to the Mains (AC Power) via an isolation transformer (> 800 VA).
- Replace safety components, indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the Mains (AC Power) lead for external damage.
- Check the strain relief of the Mains (AC Power) cord for proper function.
- Check the electrical DC resistance between the Mains (AC Power) plug and the secondary side (only for sets that have a Mains (AC Power) isolated power supply):
  1. Unplug the Mains (AC Power) cord and connect a wire between the two pins of the Mains (AC Power) plug.
  2. Set the Mains (AC Power) switch to the "on" position (keep the Mains (AC Power) cord unplugged!).
  3. Measure the resistance value between the pins of the Mains (AC Power) plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 Mohm and 12 Mohm.
  4. Switch "off" the set, and remove the wire between the two pins of the Mains (AC Power) plug.
- Check the cabinet for defects, to prevent touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD ⚠). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential. Available ESD protection equipment:
  - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
  - Wristband tester 4822 344 13999.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⏚), or hot ground (⏚), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz for PAL, or 61.25 MHz for NTSC (channel 3).
- Where necessary, measure the waveforms and voltages with (⊓) and without (⊼) aerial signal. Measure the voltages in the power supply section both in normal operation (①) and in stand-by (⏻). These values are indicated by means of the appropriate symbols.
- The semiconductors indicated in the circuit diagram and in the parts lists, are interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

2.3.2 Schematic Notes

- All resistor values are in ohms, and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kohm).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 ohm).
- All capacitor values are given in micro-farads (μ= x10^{-6}), nano-farads (n= x10^{-9}), or pico-farads (p= x10^{-12}).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "asterisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Spare Parts List. Therefore, always check this list when there is any doubt.

2.3.3 Rework on BGA (Ball Grid Array) ICs

General

Although (LF)BGA assembly yields are very high, there may still be a requirement for component rework. By rework, we mean the process of removing the component from the PWB and replacing it with a new component. If an (LF)BGA is removed from a PWB, the solder balls of the component are deformed drastically so the removed (LF)BGA has to be discarded.

Device Removal

As is the case with any component that, is being removed, it is essential when removing an (LF)BGA, that the board, tracks, solder lands, or surrounding components are not damaged. To remove an (LF)BGA, the board must be uniformly heated to a temperature close to the reflow soldering temperature.
A uniform temperature reduces the risk of warping the PWB. To do this, we recommend that the board is heated until it is certain that all the joints are molten. Then carefully pull the component off the board with a vacuum nozzle. For the appropriate temperature profiles, see the IC data sheet.

Area Preparation

When the component has been removed, the vacant IC area must be cleaned before replacing the (LF)BGA.
Removing an IC often leaves varying amounts of solder on the mounting lands. This excessive solder can be removed with either a solder sucker or solder wick. The remaining flux can be removed with a brush and cleaning agent.

After the board is properly cleaned and inspected, apply flux on the solder lands and on the connection balls of the (LF)BGA.
Note: Do not apply solder paste, as this has been shown to result in problems during re-soldering.

Device Replacement
The last step in the repair process is to solder the new component on the board. Ideally, the (LF)BGA should be aligned under a microscope or magnifying glass. If this is not possible, try to align the (LF)BGA with any board markers. So as not to damage neighbouring components, it may be necessary to reduce some temperatures and times.

More Information
For more information on how to handle BGA devices, visit this URL: *www.atyourservice.ce.philips.com* (needs subscription, not available for all regions). After login, select "Magazine", then go to "Workshop Information". Here you will find Information on how to deal with BGA-ICs.

2.3.4 Lead-free Solder

Philips CE is producing lead-free sets (PBF) from 1.1.2005 onwards.

Identification: The bottom line of a type plate gives a 14-digit serial number. Digits 5 and 6 refer to the production year, digits 7 and 8 refer to production week (in example below it is 1991 week 18).

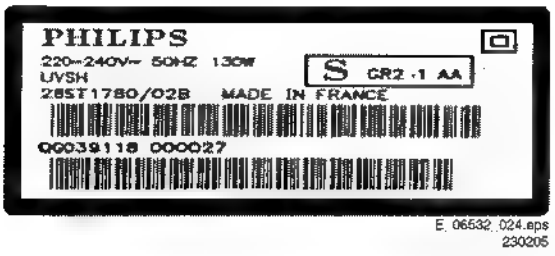


Figure 2-1 Serial number example

Regardless of the special lead-free logo (which is not always indicated), one must treat all sets from this date onwards according to the rules as described below.

Figure 2-2 Lead-free logo

Due to lead-free technology some rules have to be respected by the workshop during a repair:
- Use only lead-free soldering tin Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able:
  - To reach a solder-tip temperature of at least 400°C.
  - To stabilise the adjusted temperature at the solder-tip.
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature of around 360°C - 380°C is reached and stabilised at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will increase drastically and flux-fluid will be destroyed. To avoid wear-out of tips, switch "off" unused equipment or reduce heat.
- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly **to avoid** mixed regimes. If this cannot be avoided, carefully clear the solder-joint from old tin and re-solder with new tin.
- Use only original spare-parts listed in the Service-Manuals. Not listed standard material (commodities) has to be purchased at external companies.
- Special information for lead-free BGA ICs: these ICs will be delivered in so-called "dry-packaging" to protect the IC against moisture. This packaging may only be opened shortly before it is used (soldered). Otherwise the body of the IC gets "wet" inside and during the heating time the structure of the IC will be destroyed due to high (steam-) pressure inside the body. If the packaging was opened before usage, the IC has to be heated up for some hours (around 90°C) for drying (think of ESD-protection!).
  Do not re-use BGAs at all!
- For sets produced before 1.1.2005, containing leaded soldering tin and components, all needed spare parts will be available till the end of the service period. For the repair of such sets nothing changes.

In case of doubt whether the board is lead-free or not (or with mixed technologies), you can use the following method:
- Always use the highest temperature to solder, when using SAC305 (see also instructions below).
- De-solder thoroughly (clean solder joints to avoid the mixing of two alloys).

Caution: For BGA-ICs, you **must** use the correct temperature profile, which is coupled to the 12NC. For an overview of these profiles, visit the website *www.atyourservice.ce.philips.com* (needs subscription, but is not available for all regions).
You will find this and more technical information within the "Magazine", chapter "Workshop information".
For additional questions please contact your local repair help desk.

2.3.5 Practical Service Precautions

- **It makes sense to avoid exposure to electrical shock.** While some sources are expected to have a possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.
- **Always respect voltages.** While some may not be dangerous in themselves, they can cause unexpected reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

3. Directions for Use

You can download this information from the following websites:
http://www.philips.com/support
http://www.p4c.philips.com

4. Mechanical Instructions

Index of this chapter:

4.1 Cable Dressing
4.2 Service Positions
4.3 Assy/Panel Removal
4.4 Set Re-assembly

Notes:

- Figures below can deviate slightly from the actual situation, due to the different set executions.
- Follow the disassembling instructions in described order.

4.1 Cable Dressing

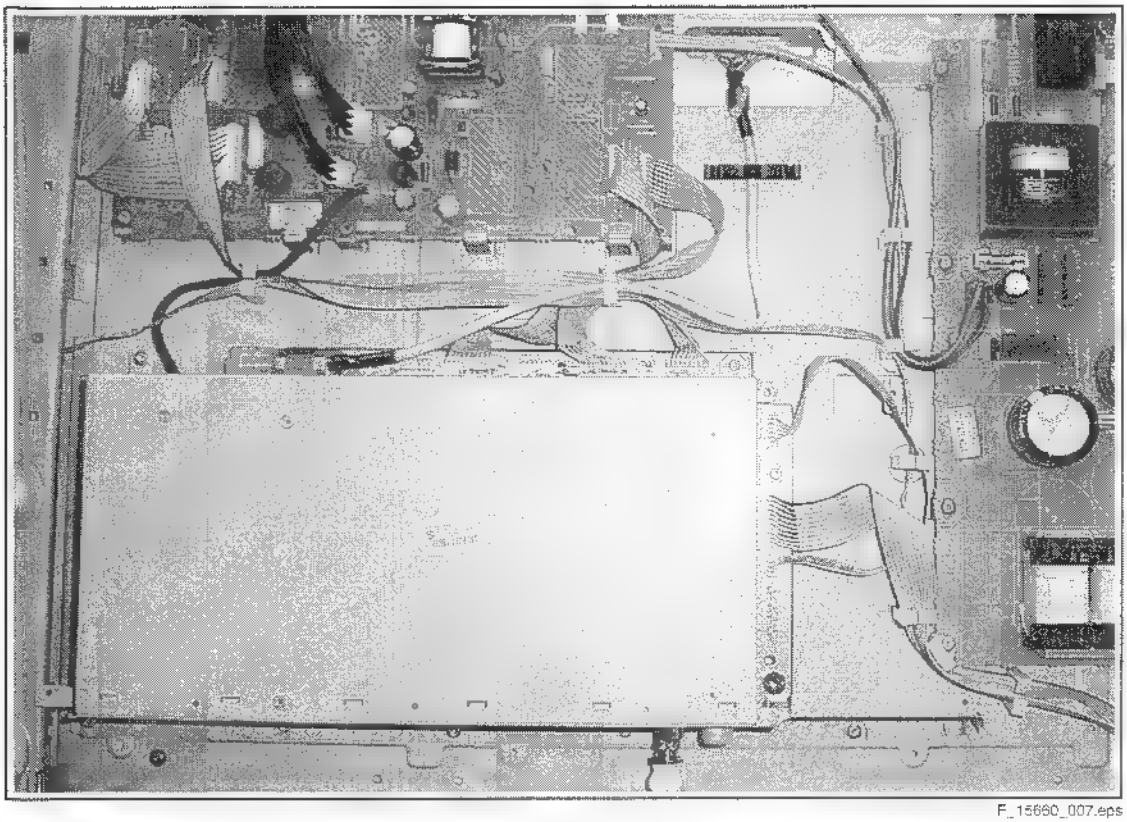


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Figure 4-1 Cable dressing

4.2 Service Positions

For easy servicing of this set, there are a few possibilities created:

- The buffers from the packaging (see figure "Rear cover").
- Foam bars (created for service).
- Aluminium service stands (created for Service).

4.2.1 Foam Bars

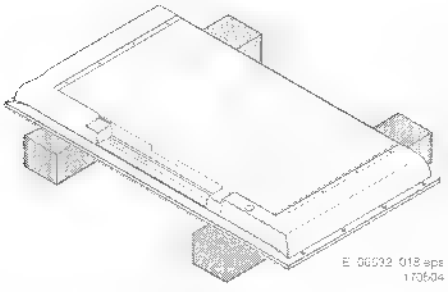

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Figure 4-2 Foam bars

The foam bars (order code 3122 785 90580 for two pieces) can be used for all types and sizes of Flat TVs. By laying the TV face down on the (ESD protective) foam bars, a stable situation is created to perform measurements and alignments.
By placing a mirror under the TV, you can monitor the screen.

4.2.2 Aluminium Stands

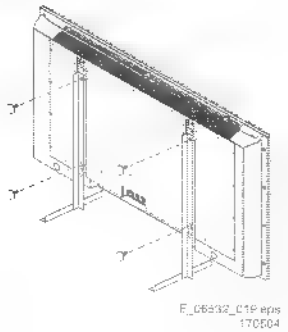

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Figure 4-3 Aluminium stands (drawing of Mkl)

The aluminium stands (order code 3122 785 90480) can be mounted with the back cover removed or still left on. So, the stand can be used to store products or to do measurements. It is also very suitable to perform duration tests without taking much space, without having the risk of overheating, or the risk of products falling. The stands can be mounted and removed quick and easy with use of the delivered screws that can be tightened and loosened manually without the use of tools. See figure above.

Note: Only use the delivered screws to mount the monitor to the stands.

4.3 Assy/Panel Removal

4.3.1 Rear Cover

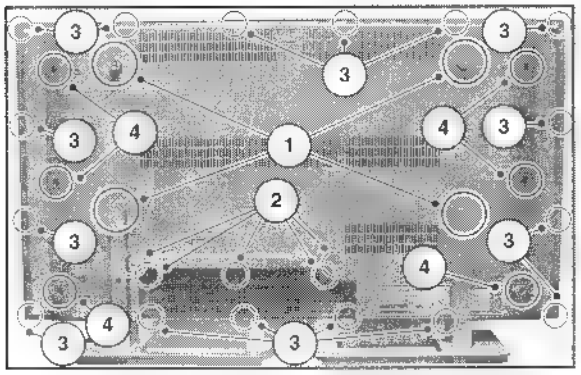

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Figure 4-4 Rear cover

Warning: Disconnect the mains power cord before you remove the rear cover.

1. Remove the screws that secure the rear cover (see Figure "Rear cover screws"); these are:
   a) 4 x big torx screws (1) for securing the stand/wall mount;
   b) 5 x small torx screws (2) near the rear I/O panel;
   c) 22 x small torx screws (3) that secure the loudspeaker compartments [6 of these screws are in sunken holes (4)] and along the edges of the rear cover.
2. Lift the rear cover from the cabinet cautiously. Make sure that wires and other internal components are not damaged during cover removal.

4.3.2 Cover Shield for IBO-zapper & SSB

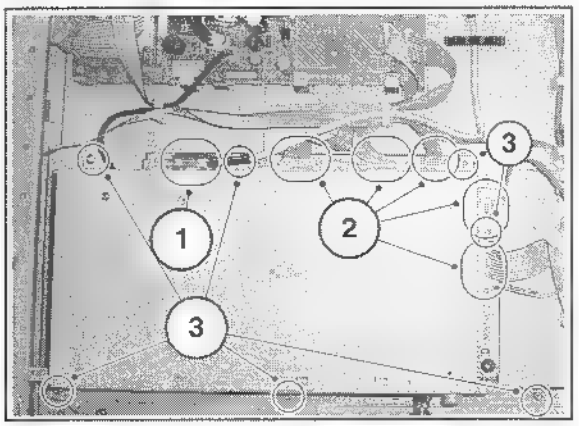

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Figure 4-5 Cover shield

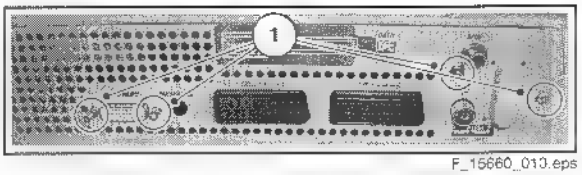

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Figure 4-6 DVI-I & SPDIF connector screws

1. Very **cautiously** disconnect the LVDS cable (1) from the SSB panel (see Figure "Cover shield"). Notice that this cable is very fragile.
2. Unplug the black cable coming from the IBO zapper/SSB board from the Audio/STBY board (see Figure "Cover shield").
3. Remove all other cables (2) from the IBO zapper/SSB board (see Figure "Cover shield").
4. Remove the 5 fixation screws that connect the top shielding with the bottom shielding, and also the 2 fixation screws that connect it with the rear connector plate, see Figure "Cover shield".
5. Remove the fixation screws from the DVI-I connector and from the SPDIF connector, see Figure "DVI-I & SPDIF connector screws (1)".
6. Remove the upper part of the shield (with the IBO zapper attached to it) from the lower part of the shield (on which the SSB board is located), by unhooking it from its brackets. Be careful not to damage the LVDS connector on the SSB board, see Figure "Cover shield".
7. Finally, remove the IBO zapper (attached to the top shielding with 4 screws), and the SSB board (attached to the lower shielding with 2 screws), see Figure "IBO zapper & SSB board".

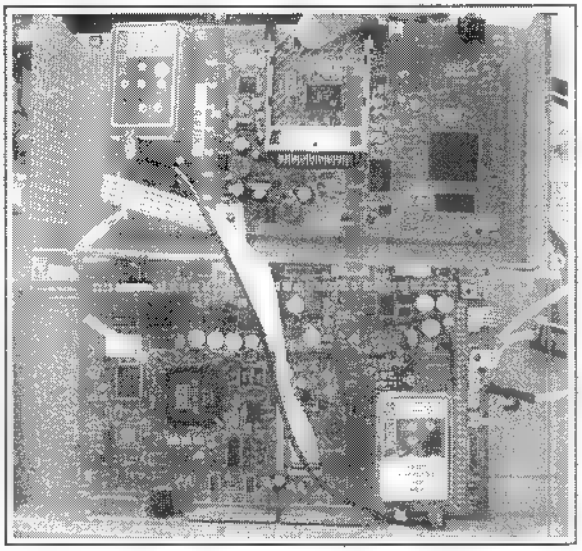

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Figure 4-7 IBO-zapper & SSB

4.4 Set Re-assembly

To re-assemble the whole set, execute all processes in reverse order.

Notes:

- While re-assembling, make sure that ■ cables are placed and connected in their original positions. See Figure "Cable dressing". Be careful with the fragile LVDS cable.
- For a complete description of the Plasma panel, see the LGE plasma panel Service Manual (12nc is listed on the frontpage).

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

5.1 Test Points
5.2 Service Modes
5.3 Problems and Solving Tips Related to CSM
5.4 Service Tools
5.5 Error Codes
5.6 The Blinking LED Procedure
5.7 Fault Finding and Repair Tips

5.1 Test Points

This chassis is equipped with test points in the service printing. In the schematics test points are identified with a rectangle box around Fxxx or Ixxx.
Perform measurements under the following conditions:

- Television set in Service Default Alignment Mode.
- Video input: Colour bar signal.
- Audio input: 3 kHz left channel, 1 kHz right channel.

5.2 Service Modes

Service Default mode (SDM) & Service Alignment Mode (SAM) offers several features for the service technician, while the Customer Service Mode (CSM) & Digital Customer Service Mode (DCSM) are used for communication between the call centre and the customer.

This chassis also offers the option of using ComPair, a hardware interface between a computer and the TV chassis. It offers the possibilities of structured troubleshooting, error code reading, and software version readout for all chassis.
Minimum requirements for ComPair: a Pentium processor, a Windows OS, and a CD-ROM drive (see also paragraph "ComPair").

5.2.1 Service Default Mode (SDM)

Purpose

- To create a predefined setting for measurements to be made.
- To override software protections.
- To start the blinking LED procedure.
- To inspect the error buffer.
- To check the life timer.

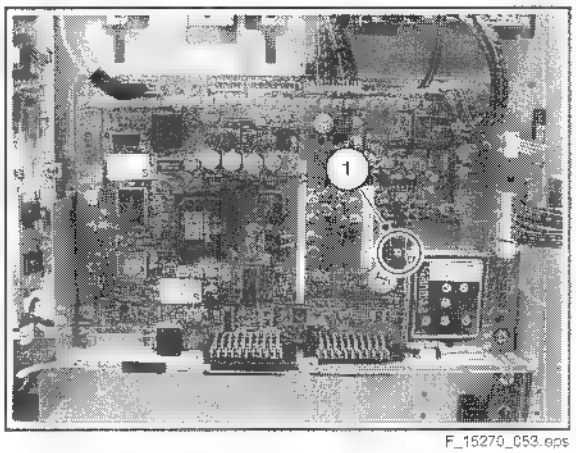
Specifications

- Tuning frequency: 475.25 MHz.
- Colour system: PAL-BG.
- All picture settings at 50% (brightness, colour contrast, hue).
- Bass, treble, and balance at 50 %; volume at 25 %.
- All service-unfriendly modes (if present) are disabled. The service unfriendly modes are:
  - Timer / Sleep timer.
  - Child / parental lock.
  - Blue mute.
  - Hotel / hospital mode.
  - Auto shut off (when no "IDENT" video signal is received for 15 minutes).
  - Skipping of non-favourite presets / channels.
  - Auto-storage of personal presets.
  - Auto user menu time-out.
  - Auto Volume Levelling (AVL).

How to Enter

To enter SDM, use one of the following methods:

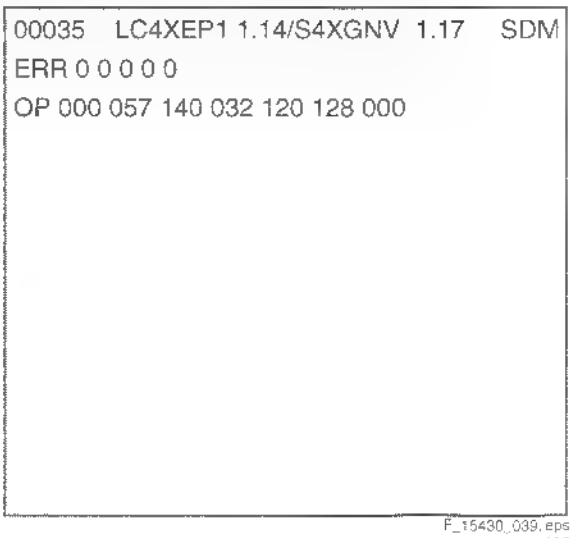
- Press the following key sequence on the remote control transmitter: "**062596**" directly followed by the MENU button (do not allow the display to time out between entries while keying the sequence).
- Short "Service" jumpers on the TV board during cold start and apply mains (see Figure "Service jumpers"). Then press the mains button (remove the short after start-up). **Caution**: Entering SDM by shorting "Service" jumpers will override the +8V-protection. Do this only for a short period. When doing this, the service-technician must know exactly what he is doing, as it could damage the television set.
- Or via ComPair.



F_15270_053.eps
180505

Figure 5-1 Service jumpers

After entering SDM, the following screen is visible, with SDM in the upper right corner of the screen to indicate that the television is in Service Default Mode.



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080605

Figure 5-2 SDM menu

How to Navigate

Use one of the following methods:

- When you press the MENU button on the remote control, the set will switch on the normal user menu in the SDM mode.
- On the TV, press and hold the VOLUME DOWN and press the CHANNEL DOWN for a few seconds, to switch from SDM to SAM and reverse.

How to Exit

Switch the set to STANDBY by pressing the mains button on the remote control transmitter or the television set.
If you turn the television set off by removing the mains (i.e., unplugging the television) without using the mains button, the television set will remain in SDM when mains is re-applied, and the error buffer is not cleared.

5.2.2 Service Alignment Mode (SAM)

Purpose

- To change option settings.
- To display / clear the error code buffer.
- To perform alignments.

Specifications

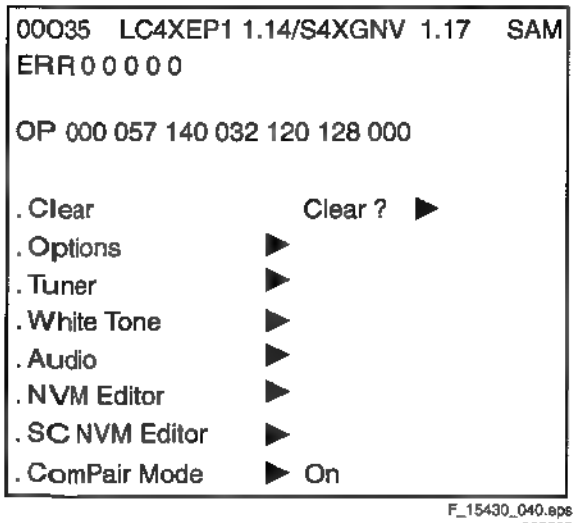
- Operation hours counter (maximum five digits displayed).
- Software version, Error codes, and Option settings display.
- Error buffer clearing.
- Option settings.
- AKB switching.
- Software alignments (Tuner, White Tone, Geometry & Audio).
- NVM Editor.
- ComPair Mode switching.

How to Enter

To enter SAM, use one of the following methods:

- Press the following key sequence on the remote control transmitter: **"062596"** directly followed by the OSD/ STATUS/INFO(I+) button (do not allow the display to time out between entries while keying the sequence).
- Or via ComPair.

After entering SAM, the following screen is visible, with SAM in the upper right corner of the screen to indicate that the television is in Service Alignment Mode.



F_15430_040.eps
080605

Figure 5-3 SAM menu

Menu Explanation

1. **LLLLL.** This represents the run timer. The run timer counts normal operation hours, but does not count standby hours.
2. **AAABCD-X.Y.** This is the software identification of the main microprocessor:
   - **A**= the project name (LC04.x).
   - **B**= the region: E= Europe, A= Asia Pacific, U= NAFTA, L= LATAM.
   - **C**= the software diversity:
     - **Europe:** T= 1 page TXT, F= Full TXT, V= Voice control.
     - **LATAM and NAFTA:** N= Stereo non-dBx, S= Stereo dBx.
     - **Asian Pacific:** T= TXT, N= non-TXT, C= NTSC.
     - **ALL regions:** M= mono, D= DVD, Q= Mk2.
   - **D**= the language cluster number.
   - **X**= the main software version number (updated with a major change that is incompatible with previous versions).
   - **Y**= the sub software version number (updated with a minor change that is compatible with previous versions).
3. **EEEEE-F.GG.** This is the software identification of the Scaler:
   - **EEEEEE**= the scaler sw cluster
   - **F**= the main sw version no.
   - **GG**= the sub-version no.
4. **SAM.** Indication of the Service Alignment Mode.
5. **Error Buffer.** Shows all errors detected since the last time the buffer was erased. Five errors possible.
6. **Option Bytes.** Used to set the option bytes. See "Options" in the Alignments section for a detailed description. Seven codes are possible.
7. **Clear.** Erases the contents of the error buffer. Select the CLEAR menu item and press the MENU RIGHT key. The content of the error buffer is cleared.
8. **Options.** Used to set the option bits. See "Options" in the Alignments section for a detailed description.
9. **Tuner.** Used to align the tuner. See "Tuner" in the Alignments section for a detailed description.
10. **White Tone.** Used to align the white tone. See "White Tone" in the Alignments section for a detailed description.
11. **Audio.** No audio alignment is necessary for this television set.
12. **NVM Editor.** Can be used to change the NVM data in the television set. See table "NVM data" further on.
13. **SC NVM Editor.** Can be used to edit Scaler NVM.
14. **ComPair.** Can be used to switch on the television to In System Programming (ISP) mode, for software uploading via ComPair.
    Caution: When this mode is selected without ComPair connected, the TV will be blocked. Remove the AC power to reset the TV.

How to Navigate

- In SAM, select menu items with the MENU UP/DOWN keys on the remote control transmitter. The selected item will be highlighted. When not all menu items fit on the screen, use the MENU UP/DOWN keys to display the next / previous menu items.
- With the MENU LEFT/RIGHT keys, it is possible to:
  - Activate the selected menu item.
  - Change the value of the selected menu item.
  - Activate the selected submenu.
- In SAM, when you press the MENU button twice, the set will switch to the normal user menus (with the SAM mode still active in the background). To return to the SAM menu press the MENU or STATUS/EXIT button.
- When you press the MENU key in while in a submenu, you will return to the previous menu.

How to Store SAM Settings
To store the settings changed in SAM mode, leave the top level SAM menu by using the POWER button on the remote control transmitter or the television set.

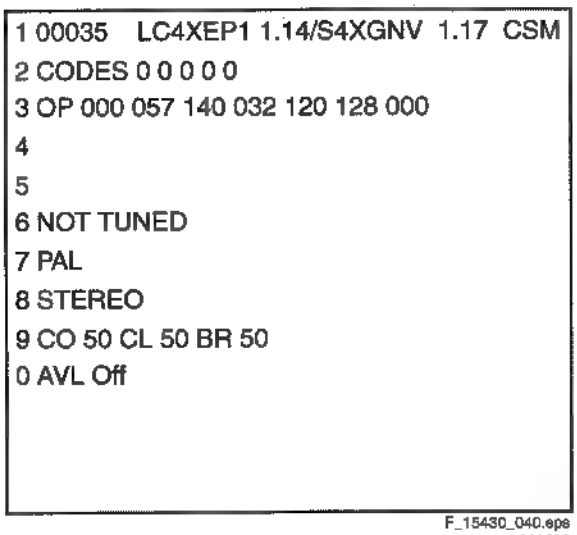
How to Exit
Switch the set to STANDBY by pressing the mains button on the remote control transmitter or the television set.
If you turn the television set "off" by removing the mains (i.e., unplugging the television) without using the mains button, the television set will remain in SAM when mains is re-applied, and the error buffer is not cleared.

5.2.3 Customer Service Mode (CSM)

Purpose
The Customer Service Mode shows error codes and information on the TV's operation settings. The call centre can instruct the customer (by telephone) to enter CSM in order to identify the status of the set. This helps the call centre to diagnose problems and failures in the TV set before making a service call.
The CSM is a read-only mode; therefore, modifications are not possible in this mode.

How to Enter
To enter CSM, press the following key sequence on the remote control transmitter: **"123654"** (do not allow the display to time out between entries while keying the sequence).

Upon entering the Customer Service Mode, the following screen will appear:



F_15430_040.eps
060605

Figure 5-4 CSM menu

Menu Explanation
1. Indication of the decimal value of the operation hours counter, Software identification of the main microprocessor (see "Service Default or Alignment Mode" for an explanation), and the service mode (CSM = Customer Service Mode).
2. Displays the last five errors detected in the error code buffer.
3. Displays the option bytes.
4. Displays the type number version of the set.
5. Reserved item for P3C call centres (AKBS stands for Advanced Knowledge Base System).
6. Indicates the television is receiving an "IDENT" signal on the selected source. If no "IDENT" signal is detected, the display will read "NOT TUNED"
7. Displays the detected Colour system (e.g. PAL/NTSC).
8. Displays the detected Audio (e.g. stereo/mono).
9. Displays the picture setting information.
10. Displays the sound setting information.

How to Exit
To exit CSM, use one of the following methods:
- Press the MENU, STATUS/EXIT, or POWER button on the remote control transmitter.
- Press the POWER button on the television set.

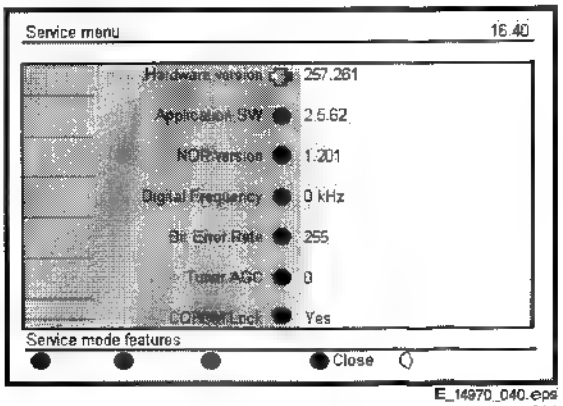
5.2.4 Digital Customer Service Mode (DCSM)

Purpose
The Digital Customer Service Mode shows error codes and information on the IBO Zapper module operation settings. The call centre can instruct the customer to activate DCSM by telephone and read off the information displayed. This helps the call centre to diagnose problems and failures in the IBO Zapper module before making a service call.

The DCSM is a read-only mode; therefore, modifications are not possible in this mode.

How to activate
To activate the DCSM, put the television in its digital mode (via the A/D button on the remote control).
1. Press the "Digital" Menu button on the remote control to activate the digital user menu ("Setup").
2. Activate the "Information" sub menu (via the "down" and "right" cursor buttons).
3. In the "Information" sub menu, press the following buttons on the remote control to activate the DCSM: **"GREEN RED YELLOW 9 7 5 9"**. Then, the "Service menu" will appear (see figures below).

Menu explanation



E_14970_040.eps
090904

Figure 5-5 DCSM menu - 1

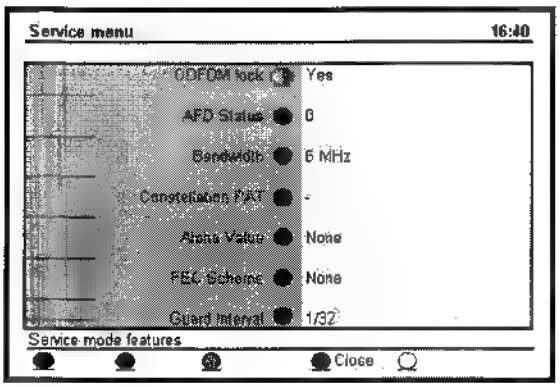


Figure 5-6 DCSM menu - 2

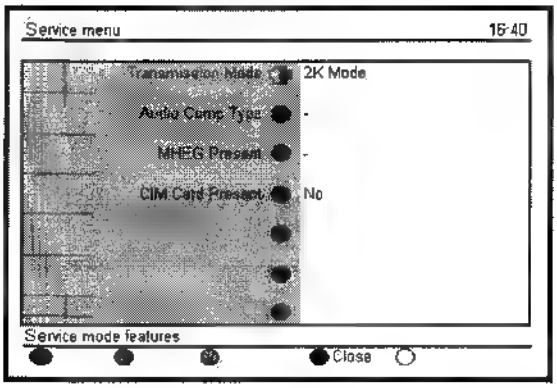


Figure 5-7 DCSM menu - 3

1. **Hardware version:** This indicates the version of the IBO Zapper module hardware.
2. **Application SW:** The application software version.
3. **NOR Version:** The NOR Flash image software version
4. **Digital Frequency:** The digital frequency that the set is tuned to.
5. **Bit Error Rate:** The error rate measured before the error correction algorithm circuitry. (this value gives an impression of the received signal)
6. **Tuner AGC:** Tuner AGC value.
7. **COFDM Lock:** Indication if COFDM decoder is locked.
8. **AFD Status:** Status of the Active Picture Format Descriptor.
9. **Terrestrial Delivery System Parameters:**
   - **Bandwidth:** Bandwidth of the received signal.
   - **Constellation Pattern:** Displays the signal constellation.
   - **Alpha Value:** Displays the Alpha Value.
   - **FEC Scheme:** Displays the Forward Error Correcting Scheme
   - **Guard Interval:** Displays the value for the Guard Interval.
   - **Transmission Mode:** Displays the Transmission Mode.
10. **Audio Comp Type:** Type of detected audio stream.
11. **MHEG Present:** Indicates if MHEG is present or not.
12. **CIM Card Present:** Indicates if CIM card is present or not.

How to exit

Press the **BLUE** button on the Remote Control to exit DCSM.

5.3 Problems and Solving Tips Related to CSM

5.3.1 Picture Problems

Note: The problems described below are all related to the TV settings. The procedures used to change the value (or status) of the different settings are described.

Picture too Dark or too Bright

If:

- The picture improves when you press the AUTO PICTURE button on the remote control transmitter, or
- The picture improves when you enter the Customer Service Mode,

Then:

1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys (if necessary) to select BRIGHTNESS.
6. Press the MENU LEFT/RIGHT keys to increase or decrease the BRIGHTNESS value.
7. Use the MENU UP/DOWN keys to select PICTURE.
8. Press the MENU LEFT/RIGHT keys to increase or decrease the PICTURE value.
9. Press the MENU button on the remote control transmitter twice to exit the user menu.
10. The new PERSONAL preference values are automatically stored.

White Line around Picture Elements and Text

If:

The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:

1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys to select SHARPNESS.
6. Press the MENU LEFT key to decrease the SHARPNESS value.
7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

Snowy Picture

Check CSM line 6. If this line reads "Not Tuned", check the following:

- Antenna not connected. Connect the antenna.
- No antenna signal or bad antenna signal. Connect a proper antenna signal.
- The tuner is faulty (in this case line 2, the Error Buffer line, will contain error number 10). Check the tuner and replace/repair the tuner if necessary.

Black and White Picture

If:

- The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:

1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys to select COLOR.
6. Press the MENU RIGHT key to increase the COLOR value.
7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

Menu Text not Sharp Enough

If:

- The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:

1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys to select PICTURE.
6. Press the MENU LEFT key to decrease the PICTURE value.
7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

5.4 Service Tools

5.4.1 ComPair

Introduction

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the European DST (service remote control), which allows faster and more accurate diagnostics. ComPair has three big advantages:

1. ComPair helps you to quickly get an understanding on how to repair the chassis in a short time by guiding you systematically through the repair procedures.
2. ComPair allows very detailed diagnostics (on I^2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I^2C commands yourself because ComPair takes care of this.
3. ComPair speeds up the repair time since it can automatically communicate with the chassis (when the microprocessor is working) and all repair information is directly available. When ComPair is installed together with the Force/SearchMan electronic manual of the defective chassis, schematics and PWBs are only a mouse click away.

Specifications

ComPair consists of a Windows based fault finding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial (or RS-232) cable.
For this chassis, the ComPair interface box and the TV communicate via a bi-directional service cable via the service connector(s).

The ComPair faultfinding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in two ways:

- Automatically (by communicating with the television): ComPair can automatically read out the contents of the entire error buffer. Diagnosis is done on I^2C/UART level. ComPair can access the I^2C/UART bus of the television. ComPair can send and receive I^2C/UART commands to the microcontroller of the television. In this way, it is possible for ComPair to communicate (read and write) to devices on the I^2C/UART buses of the TV-set.
- Manually (by asking questions to you): Automatic diagnosis is only possible if the microcontroller of the television is working correctly and only to a certain extent. When this is not the case, ComPair will guide you through the faultfinding tree by asking you questions *(e.g. Does the screen give a picture? Click on the correct answer: YES / NO)* and showing you examples *(e.g. Measure test-point I7 and click on the correct oscillogram you see on the oscilloscope)*. You can answer by clicking on a link *(e.g. text or a waveform picture)* that will bring you to the next step in the faultfinding process.

By a combination of automatic diagnostics and an interactive question / answer procedure, ComPair will enable you to find most problems in a fast and effective way.

How To Connect

This is described in the chassis faultfinding database in ComPair.

Caution: It is compulsory to connect the TV to the PC as shown in the picture below (with the ComPair interface in between), as the ComPair interface acts as a level shifter. If one connects the TV directly to the PC (via UART), ICs will be blown!

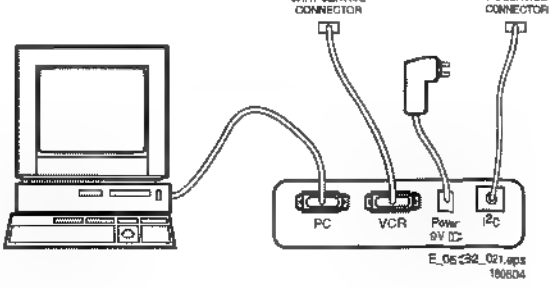


Figure 5-8 ComPair interface connection

How To Order

- ComPair order codes (EU/AP/LATAM):
- Starter kit ComPair32/SearchMan32 software and ComPair interface (excl. transformer): 3122 785 90450.
- ComPair interface (excl. transformer): 4822 727 21631.
- Starter kit ComPair32 software (registration version): 3122 785 60040.
- Starter kit SearchMan32 software: 3122 785 60050.
- ComPair32 CD (update): 3122 785 60070 (year 2002), 3122 785 60110 (year 2003 onwards).
- SearchMan32 CD (update): 3122 785 60100 (year 2002), 3122 785 60120 (year 2003), 3122 785 60130 (year 2004).
- ComPair firmware upgrade IC: 3122 785 90510.

- Transformer (non-UK): 4822 727 21632.
- Transformer (UK): 4822 727 21633.
- ComPair interface cable: 3122 785 90004.
- ComPair interface extension cable: 3139 131 03791.
- ComPair UART interface cable: 3122 785 90630.

Note: If you encounter any problems, contact your local support desk.

5.4.2 LVDS Tool

Introduction
This service tool (also called "ComPair Assistant 1") may help you to identify, in case the TV does not show any picture, whether the Small Signal Board (SSB) or the display of a Flat TV is defective.
Furthermore it is possible to program EPLDs with this tool (Byteblaster). Read the user manual for an explanation of this feature.

Since 2004, the LVDS output connectors in our Flat TV models are standardised (with some exceptions). With the two delivered LVDS interface cables (31p and 20p) you can cover most chassis (in special cases, an extra cable will be offered).

When operating, the tool will show a small (scaled) picture on a VGA monitor. Due to a limited memory capacity, it is not possible to increase the size when processing high-resolution LVDS signals (>= 1280x768). Generally this tool is intended to determine if the SSB is working or not. Thus to determine if LVDS, RGB, and sync signals are okay.

How to Connect
Connections are explained in the user manual, which is delivered with the tool.

Note: To use the LVDS tool, you must have ComPair release 2004-1 (or later) on your PC (engine version >= 2.2.05).
For every TV type number and screen size, one must choose the proper settings via ComPair. The ComPair file will be updated regularly with new introduced chassis information.

How to Order
- LVDS tool (incl. two LVDS cables: 31p and 20p): 3122 785 90671.
- Service Manual LVDS tool: 3122 785 00810.
- LVDS cable 20p (for Telra 14-inch): 3122 785 90810.
- LVDS cable 30p (for LC4.3): 3122 785 90820.
- LVDS cable 41p-to-31p for CA1 (dual -> single LVDS): 3122 785 90830.

5.5 Error Codes

The error code buffer contains all errors detected since the last time the buffer was erased. The buffer is written from left to right. When an error occurs that is not yet in the error code buffer, it is displayed at the left side and all other errors shift one position to the right.

5.5.1 How to Read the Error Buffer

You can read the error buffer in 3 ways:
- On screen via the SAM (if you have a picture).
  Examples:
  - ERROR: 0 0 0 0 0 : No errors detected
  - ERROR: 6 0 0 0 0 : Error code 6 is the last and only detected error
  - ERROR: 9 6 0 0 0 : Error code 6 was detected first and error code 9 is the last detected (newest) error
- Via the blinking LED procedure (when you have no picture). See "The Blinking LED Procedure".
- Via ComPair.

5.5.2 How to Clear the Error Buffer

The error code buffer is cleared in the following cases:
- By using the CLEAR command in the SAM menu:
  - To enter SAM, press the following key sequence on the remote control transmitter: "**062596**" directly followed by the OSD/STATUS button (do not allow the display to time out between entries while keying the sequence).
  - Make sure the menu item CLEAR is highlighted. Use the MENU UP/DOWN buttons, if necessary.
  - Press the MENU RIGHT button to clear the error buffer. The text on the right side of the "CLEAR" line will change from "CLEAR?" to "CLEARED"
- If the contents of the error buffer have not changed for 50 hours, the error buffer resets automatically.

Note: If you exit SAM by disconnecting the mains from the television set, the error buffer is not reset.

5.5.3 Error Codes

In case of non-intermittent faults, write down the errors present in the error buffer and clear the error buffer before you begin the repair. This ensures that old error codes are no longer present.
If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error and not the actual cause of the problem (for example, a fault in the protection detection circuitry can also lead to a protection).

Table 5-1 Error code overview

Error	Device	Error Description	Check Item	Diagram
	Not applicable	No Error		
1	Not applicable	Mis-match of TV Hercules SW and Scaler SW	-	-
2	Not applicable	-	-	-
3	Not applicable	-	-	-
4	Genesis Scaler Flash-ROM	I^2C error while communicating with the Genesis Scaler and/or Flash-ROM faulty/empty	7B01 7B01	B7 + B8 B10
5	Scaler supply 7752	+5V protection	7752	B6
6	Not applicable	General I^2C error	1102, 7L04, 7M00	B1 + B18 + B19
7	ADC	I^2C error	7L04	B18
8	Scaler EEPROM	I^2C error while communicating with the Scaler EEPROM	7C01	B11
9	Hercules EEPROM	I^2C error while communicating with the Hercules EEPROM (NVM for TV). **Remark:** when the Hercules EEPROM is defective, the Hercules should operate with its default values.	7207	B2
10	Tuner	I^2C error while communicating with the PLL tuner	1102, F102, F104, F107	B1
11	Columbus	I^2C error while communicating with the 2D/3D combfilter Columbus	7M00	B19
12	Not applicable	-	-	-

Error	Device	Error Description	Check Item	Diagram
13	HDMI Panellink Receiver/ Decoder	I^2C error while communicating with the iBoard HDMI Panellink Receiver/ Decoder (only in NAFTA and AP sets)	7D03	B12 (only in NAFTA and AP sets)
14	Scaler SDRAM	Read-write error with the Scaler SDRAM	7B01	B10
15	Not applicable	-	-	-
16	EPLD	I^2C error while communicating with EPLD	7N02	B20 + B21
17	Digital Module (only on Digital sets)	I^2C error while communicating with the Digital Module (only on Digital sets)	Digital Module (only on Digital sets)	
18	Not applicable	-	-	-

5.6 The Blinking LED Procedure

Using this procedure, you can make the contents of the error buffer visible via the front LED. This is especially useful when there is no picture.

When the SDM is entered, the front LED will blink the contents of the error-buffer:

- The LED blinks with as many pulses as the error code number, followed by a time period of 1.5 seconds, in which the LED is off.
- Then this sequence is repeated.

Any RC5 command terminates this sequence.

Example of error buffer: **12 9 6 0**
After entering SDM, the following occurs:

- 1 long blink of 5 seconds to start the sequence,
- 12 short blinks followed by a pause of 1.5 seconds,
- 9 short blinks followed by a pause of 1.5 seconds,
- 6 short blinks followed by a pause of 1.5 seconds,
- 1 long blink of 1.5 seconds to finish the sequence,
- The sequence starts again with 12 short blinks.

5.7 Fault Finding and Repair Tips

Notes:

- It is assumed that the components are mounted correctly with correct values and no bad solder joints.
- Before any fault finding actions, check if the correct options are set.

5.7.1 NVM Editor

In some cases, it can be handy if one directly can change the NVM contents. This can be done with the "NVM Editor" in SAM mode. With this option, single bytes can be changed.

Caution:

- **Do not change the NVM settings without understanding the function of each setting, because incorrect NVM settings may seriously hamper the correct functioning of the TV set!**
- **Do not change the Scaler NVM settings, as this will hamper the DVI functionality of the TVset!**
- Always note down the existing NVM settings, before changing the settings. This will enable you to return to the orginal settings, if the new settings turnout to be incorrect.

Table 5-2 NVM editor overview

	Hex	Dec	Description
.ADR	0x000A	10	Existing value
.VAL	0x0000	0	New value
.Store	Store?		

Table 5-3 NVM Default values (option bit settinge through NVM Editor in SAM Mode)

Byte Nr.	Bit	Feature/Mode	Description	42PF7520D/10	42PF5520D/10
Byte 0 174(dec)	0	QSS (LSB)	Mode of quasi split sound amplifier	1	1
	1	FMI	Connection of output of QSS amplifier	1	1
	2	HCO	EHT tracking mode	0	0
	3	HP2	Synchronization of OSD/Text display	1	1
	4	FSL	Forced slicing level for vertical sync	1	1
	5	TFR	DC transfer ratio of luminance signal	1	1
	6	OSVE	Black current measuring in overscan	0	0
	7	MVK (MSB)	(For Future Usage, as defined by software)	0	0
		Total Dec Values		59	59
		Total Hex Values		3B	3B
Byte 1 175(dec)	0	PSE	PSE	0	0
	1	OPC	OPC	0	0
	2	PRIS	PRIS	0	0
	3	CONTINUOUS FACTORY	Continuous factory mode	0	0
	4	WHITE PATTERN ON	Last color pattern status in factory mode	▮	0
	▮	SDM MODE	Service default mode on/off	0	0
	6	SAM MODE	Service Align mode on/off	0	0
	7	SVMA	Scavm On / Off	0	0
		Total Dec Values		0	0
		Total Hex Values		00	00
Byte 2 176(dec)	0	MUTE STATUS	Mute status	0	0
	1	TUNER AUTO MODE	Auto mode	1	1
	2	CABLE MODE	Cable/Antenna mode	0	0
	3	LAST POWER MODE	Last power status of the set	1	1
	4	CHILD LOCK MODE	Child lock enabled	0	0
	▮	SURF MODE	Surf mode on/off	0	0
	6	FACTORY MODE	Factory mode on	0	0
	7	PSNS	For PAL color enhancement in ES4	1	1
		Total Dec Values		138	138
		Total Hex Values		8A	8A
Byte 3 177(dec)	0	RADIO/TV MODE	Radio mode or TV mode	0	0
	1	WAKE-UP MODE	WAKE-UP MODE	0	▮
	2	HOTEL MODE	TV in Hotel mode	0	0
	3	HOTEL KBD LOCK	Keyboard locked	0	0
	4	HBL	HBL	0	0
	5	BLS	Blue stretch mode	1	1
	6	SL	SL	0	0
	7	CFA0	Comb filter On/Off	1	1
		Total Dec Values		160	160
		Total Hex Values		A0	A0
Byte 4 178(dec)	▮	Signal Strength	Signal Strength Switch in MK2	0	0
	1	LPG	LPG	0	0
	2	DVD TRAY LOCK	Lock/Unlock DVD tray	0	0
	3	SCRSAVER MODE	Screen saver mode	1	1
	4	BKS	Black Stretch Mode	1	1
	5	BSD	Black Stretch Depth	1	1
	▮	CRA0	Coring on SVM	1	1
	7	PIP QSS	PIP QSS	0	▮
		Total Dec Values		120	120
		Total Hex Values		78	78

Byte Nr.	Bit	Feature/Mode	Description	42PF7520D/10	42PF5520D/10
Byte 5 179(dec)	0	FFI	Fast Filter	0	0
	1	NNR	No red reduction during blue stretch	1	1
	2	MUS	NTSC matrix	1	1
	3	GAM	Gamma control	1	1
	4	CBS	Control sequence of beam current limiting	0	0
	5	LLB	Low level of beam current limiter	0	0
	▮	DSA	Dynamic skin tone angle area	1	1
	7	DSK	Dynamic skin tone angle on/ off	0	0
		Total Dec Values		78	78
		Total Hex Values		4E	4E
Byte 6 180(dec)	0	LTI status	LTI last status	1	1
	1	Inc_Life_Time	Inc_Life_Time	0	0
	2	PC_Mode	PC_Mode	0	0
	3	HD_Mode	HD_Mode	0	0
	4	Tact_Switch	Tact_Switch	0	0
	▮	Set_In_Special_Stby	Set_In_Special_Stby	0	0
	6	Hotel_OSDDisplay	Hotel_OSDDisplay	0	0
	7	Hotel_MonitorOut	Hotel_MonitorOut	0	0
		Total Dec Values		1	1
		Total Hex Values		01	01
Byte 7 181(dec)	0	Hotel_IconMode	Hotel_IconMode	0	0
	1	DBE	DBE	1	1
	▮	SD	SD	0	0
	3	Set_in_PC_Sleep_Mode	Set_in_PC_Sleep_Mode	0	0
	4	Reserved	Reserved	0	0
	5	Reserved	Reserved	0	0
	▮	Reserved	Reserved	0	0
	7	Reserved	Reserved	0	0
		Total Dec Values		2	2
		Total Hex Values		02	02

5.7.2 Load Default NVM Values

In case a blank NVM is placed or when the NVM content is corrupted, default values can be downloaded into the NVM. (For empty NVM replacement, short the SDM with a jumper and apply the mains voltage. Remember to remove the jumper after the reload is completed). After the default values are downloaded, it will be possible to start up and to start aligning the TV set. This is no longer initiated automatically; to initiate the download the following action has to be performed:

1. Switch "off" the TV set by disconnecting the AC Power plug.
2. Short circuit the SDM jumpers (keep short-circuited).
3. Press P+ or Ch+ on the local keyboard (and keep it pressed).
4. Switch on the TV set via the AC Power plug.
5. Keep pressing the P+/Ch+ button until the set has started up and the SDM is shown.

Alternative method:

1. Go to SAM.
2. Select NVM Editor (not SC NVM Editor).
3. Select ADR (address) to 1 (dec).
4. Change the VAL (value) to 170 (dec).
5. Store the value.
6. Disconnect the mains plug and wait for a few seconds.
7. Reconnect the mains plug and wait until the set goes into its standby mode (red LED lights up).
8. Restart the set.

5.7.3 Tuner and IF

No Picture in RF Mode, but there is a Noise Raster

1. Check whether picture is present in AV. If not, go to Video processing troubleshooting section.
2. If present, check if the Option settings are correct.
3. Check if all the supply voltages are present (3.3/5/8/12/33 V).
4. Check if the I²C lines are working correctly (3.3 V).
5. Manually store a known channel and check if there is IF output at Tuner pin 11.
6. Check the tuning DC voltage at pin 2 of the Tuner. The DC voltage should vary according to the frequency/channel being chosen.
7. If the tuning voltage is OK, check the tuner output, pin 11.
8. If it has no output, the Tuner may have a defect. Change the Tuner.

Sound in Picture Problem for L' System (rolling horizontal lines)

1. Check whether AGC L' in SAM mode is set to 0.
2. If yes, align the set to correct value.

Required System is not Selected Correctly

Check whether a Service jumper (#4204 & 4205, 0805 size) is present. If yes, remove it.

5.7.4 Video Processing

No Power

1. Check +12 V and 3V3 at position 1J02.
2. If no supply, check the connector 1J02.
3. If it is correct, check the power supply board.

Power Supply is Correct, but no Green LED

1. Check if the connectors 1K00 are properly inserted.
2. If they are inserted correctly, check if the 3V3 is present.

No Picture Display (blank screen with correct sound output)

1. Check whether the user menu is visible.
2. If the user menu is OK, activate teletext mode.
3. If teletext is OK, the problem is in the ADC (B18) & Columbus 3D combfilter (B19), ▮ present (depending on model, see also paragraph "Teletext Path" in chapter 9).
4. ▮ the user menu is not visible, check if the LCD panel backlight is ON.
5. ▮ the backlight is OFF, the problem is in the power supply board or LCD panel. Also check pin 12 (LAMP_ON_OFF) of 1J02. It should be HIGH during normal operation.

Note: For faultfinding purposes, it is important to know the following: in Pixel Plus and Digital Crystal Clear models, which have an ADC (B18) and Columbus 3D combfilter (B19), the digital input of the scaler is used for the digital video path (Hercules output), whereas the analogue RGB input (analogue input of the scaler) is only used for teletext. This means that no mixed mode (video plus teletext simultaneously) is possible. If there is sound and teletext, but no video and user menu (blank screen), the digital path (Hercules - ADC - Columbus - Scaler) is faulty. ▮ there is sound but no teletext, the back-end part (Scaler - LCD panel) is faulty. In Crystal Clear models, which do not have an ADC and Columbus, the RGB path (analogue input of scaler) is used for both video and teletext.

No TV, but PC is Present

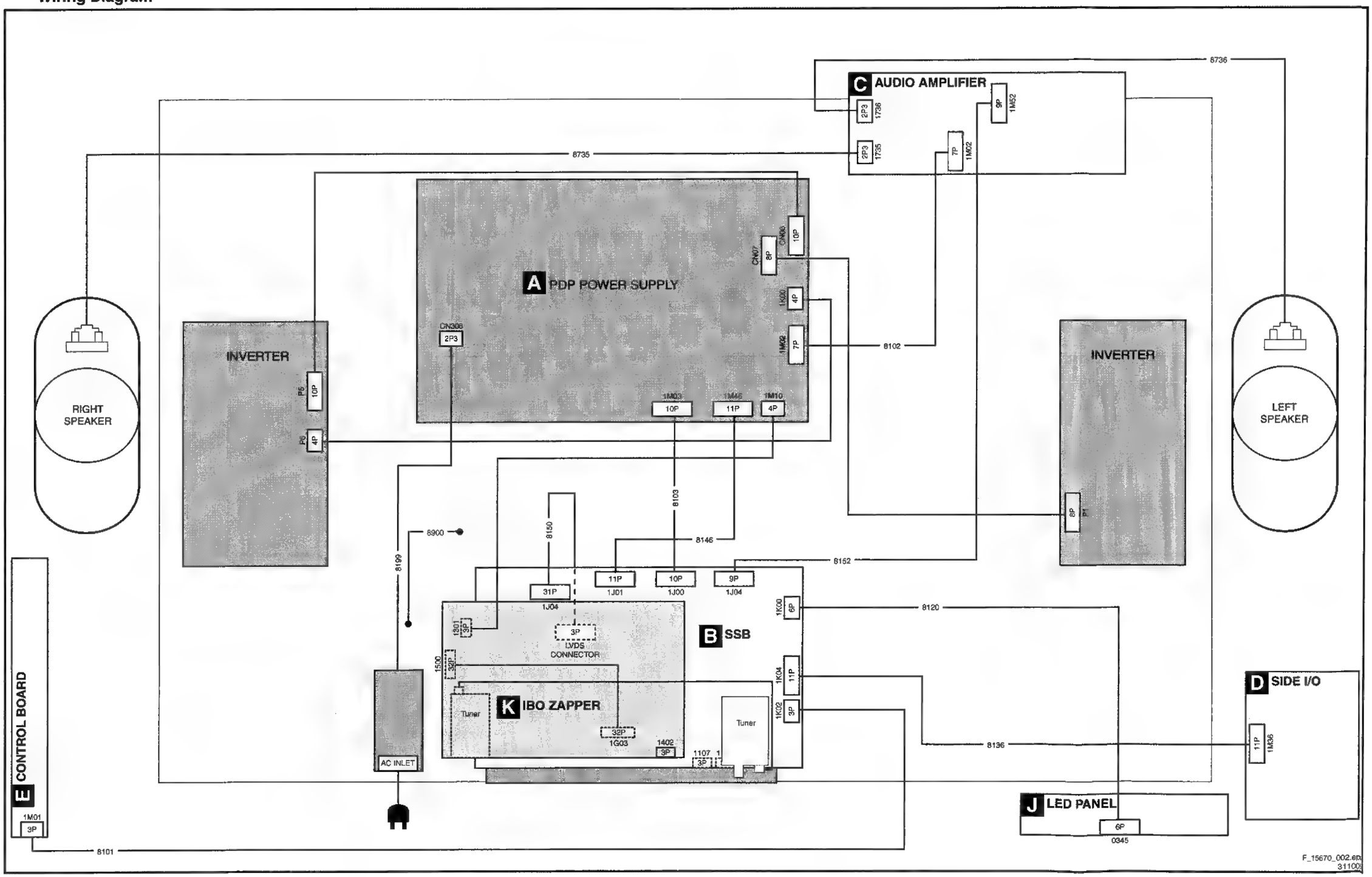
1. Check ▮ Hsync_SDTV and Vsync_SDTV are present at pin 1 & pin13 of 7E03.
2. ▮ they are present, check teletext output.
3. ▮ there is no teletext output, the IC TDA150xx may be defect.

5.7.5 Power Supply

In case the power supply does not work, check (apart from the obvious fuse-check) if the oscillators in IC7001 and IC7U01 are working. If not, replace the ICs.

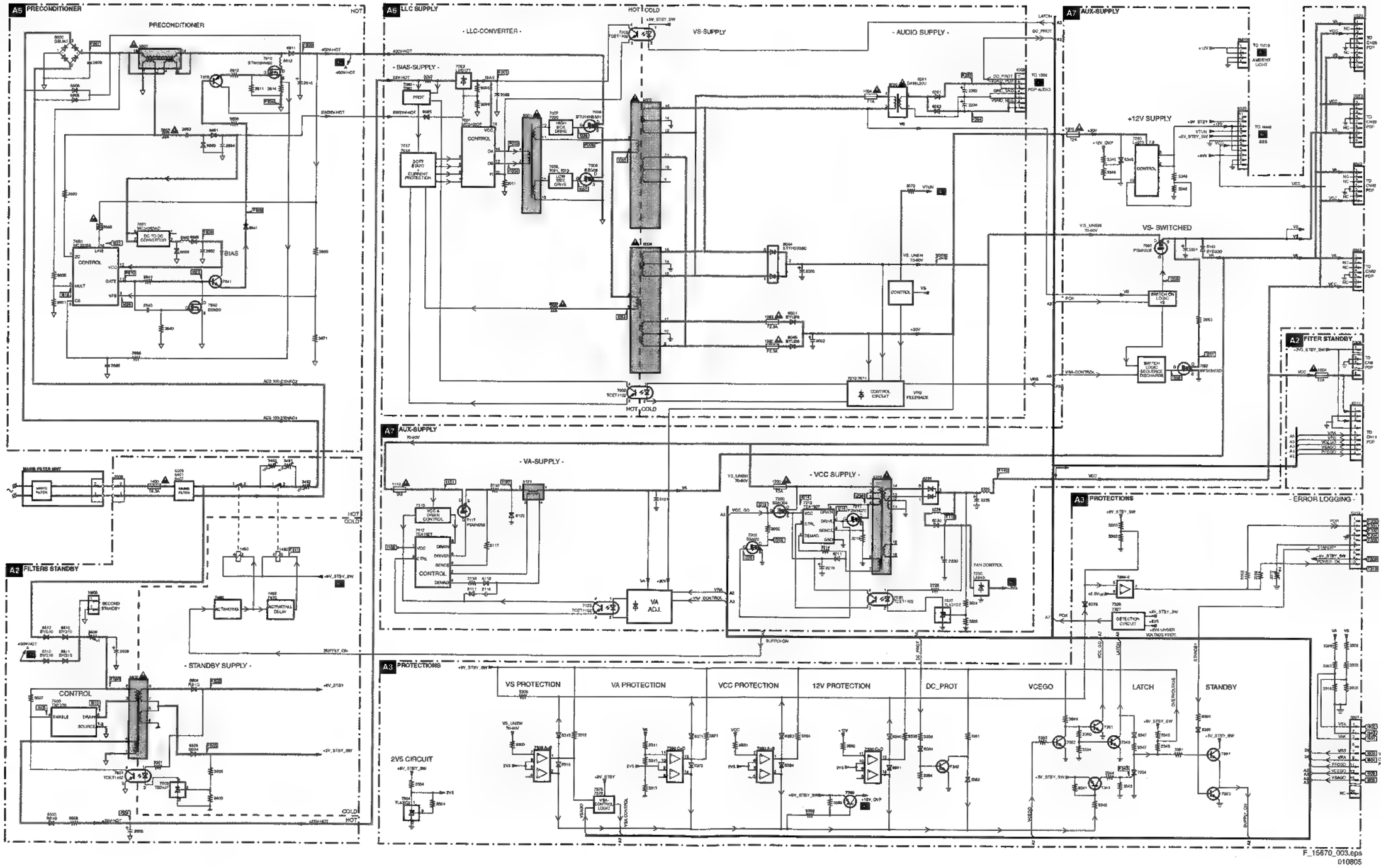
6. Block Diagrams, Testpoint Overviews, and Waveforms

Wiring Diagram

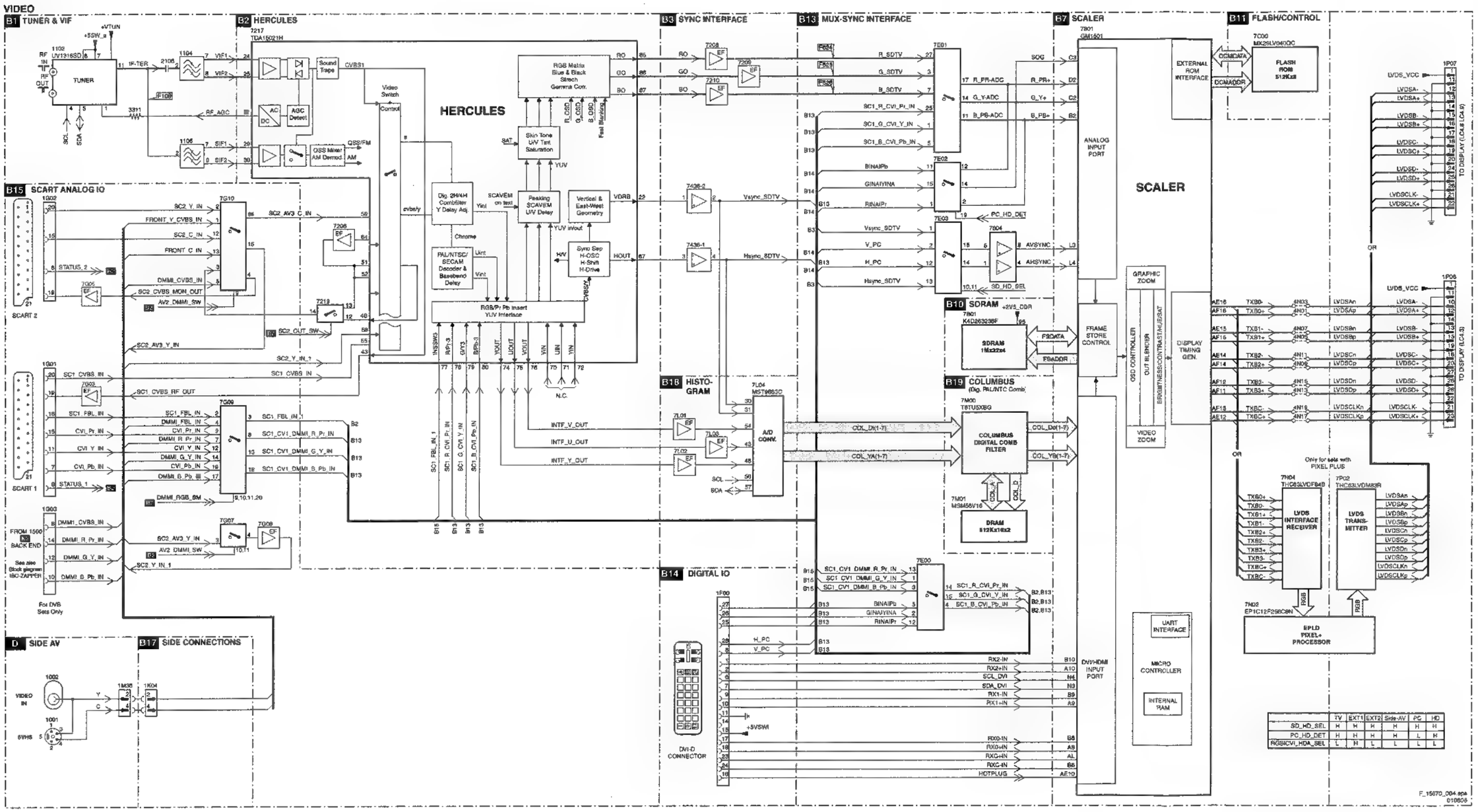


Block Diagram Supply

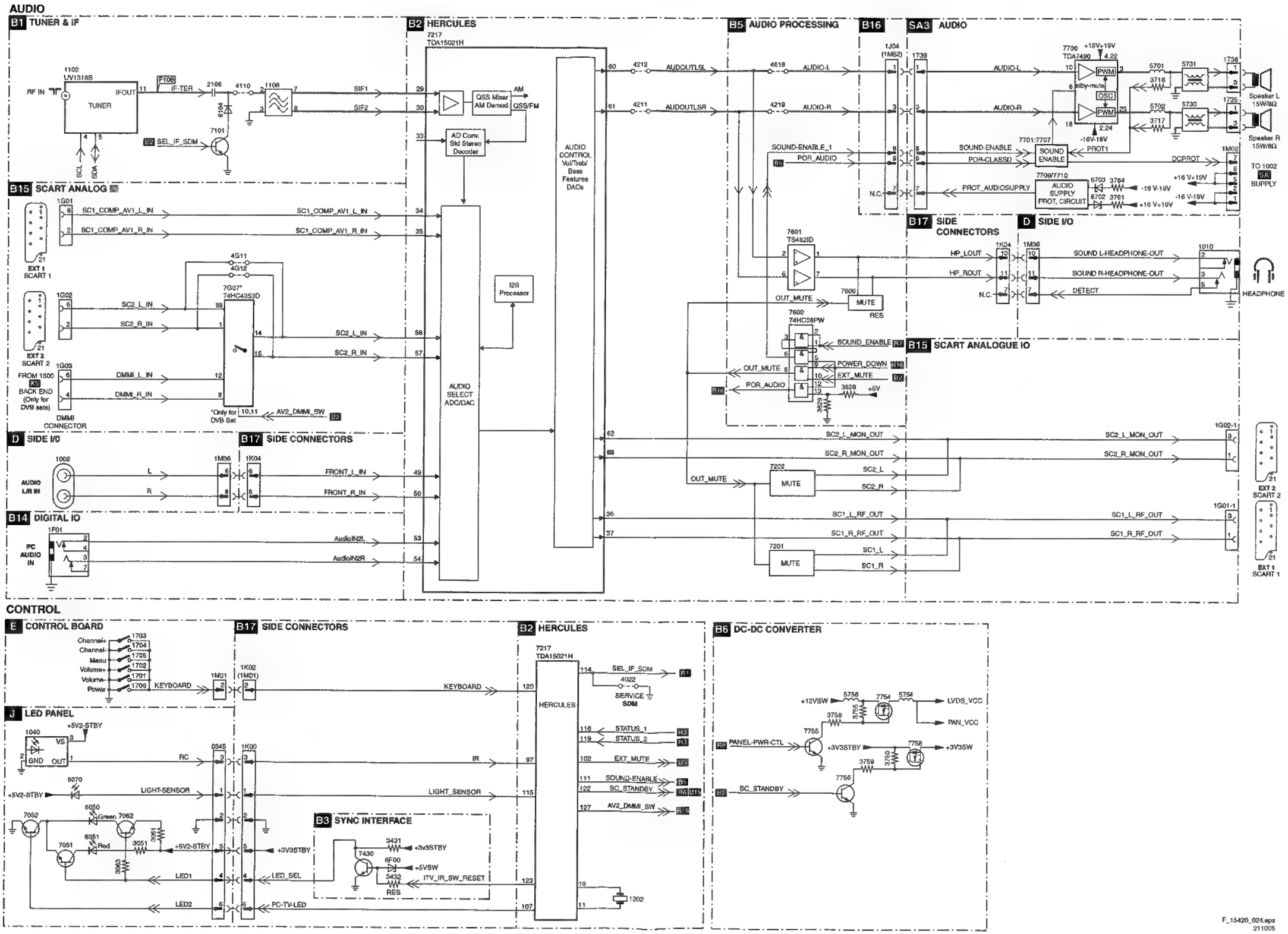
SUPPLY 42" FHP



Block Diagram Video



Block Diagram Audio



Testpoint Overview SSB (Top Side)

F101	C1
F102	D2
F103	C1
F104	D2
F105	D1
F106	D2
F107	C1
F108	C2
F109	C2
F110	B2
F111	B2
F112	B2
F113	B2
F114	C2
F115	D2
F116	D2
F117	D2
F201	A2
F202	A2
F203	A2
F204	B3
F205	B2
F206	B2
F207	B2
F208	B2
F209	B2
F210	C2
F211	A2
F212	A2
F213	A2
F214	A2
F215	A2
F216	B3
F218	A2
F219	A2
F220	A3
F221	A3
F222	B2
F223	B2
F224	A2
F225	A3
F226	A3
F227	C3
F228	A3
F229	B2
F230	A3
F231	A2
F232	B3
F233	B3
F234	B3
F235	B3
F236	C3
F237	B2
F238	B2
F239	B2
F240	B2
F241	B3
F242	B2
F243	B2
F244	B2
F245	A2
F246	B2
F247	A2
F248	B2
F249	B2
F250	B3
F501	A2
F502	A2
F503	A2
F504	A2
F505	A3
F601	A1
F602	A2
F603	A1
F604	A2
F605	A2
F700	A6
F701	A5
F710	A5
F736	A3
F737	A3
F738	A3
F743	B3
F754	A5
F755	A6
F800	B7
F801	B6
F802	C5
F803	B5
F804	B6
F900	C5
F901	C5
F902	C6
F903	C5
F904	C6
F905	B6
F906	B6
F907	B5
F908	C5
F909	C5
F910	C6
FB01	B7
FC00	B5
FC01	B5
FC02	B5
FC03	B5
FC04	B5
FC05	C5
FC06	B5
FC07	B4
FC08	B5
FC09	B5
FC10	B4
FD00	C7
FD01	D7
FD02	D7
FD03	D7
FD04	C7
FD05	C6
FD06	C6
FD07	C7
FD08	C7
FD09	C7
FD10	C7
FD11	D7
FD12	C7
FD13	C7
FD14	C7
FD15	C7
FD16	C7
FD17	B6
FE00	C5
FE01	C5
FE02	C4
FE03	B5
FE04	D5
FE05	C5
FE06	D5
FE07	B7
FE08	C4
FE09	C5
FE10	C4
FE11	C5
FE12	C5
FE13	C5
FF00	D6
FF01	D6
FF02	D4
FF03	D7
FF04	D7
FF05	D7
FF06	D6
FF07	D6
FF08	D3
FF09	D7
FF10	D6
FF11	D6
FF12	D6
FF13	D6
FG00	D4
FG01	D4
FG02	D3
FG03	D4
FG04	D3
FG05	D3
FG06	D3
FG07	D3
FG08	D3
FG09	D3
FG10	D2
FG11	D3
FG12	D2
FG13	D2
FG14	D6
FG15	D5
FG16	D6
FG17	D6
FG18	D5
FG19	D5
FG20	D5
FG21	D5
FG22	D5
FG23	D4
FG24	D3
FG25	D3
FG26	D5
FG27	D5
FG28	D5
FG30	D5
FG32	D3
FG33	D3
FG34	D3
FG35	D3
FG36	D4
FG37	D3
FG38	D3
FG39	D4
FG40	D7
FG41	D3
FG42	D4
FG43	D4
FG44	D4
FG45	D4
FG47	D4
FG48	D4
FG49	D4
FG50	D4
FG51	C2
FG53	D4
FG54	D4
FG56	D4
FJ00	A7
FJ01	A5
FJ02	A4
FJ03	A5
FJ04	A5
FJ05	A4
FJ06	A4
FJ07	A5
FJ08	A4
FJ09	A2
FJ10	A2
FJ11	A4
FJ12	A2
FJ13	A2
FJ14	A2
FJ15	A7
FJ16	A7
FJ17	A7
FJ18	A7
FJ19	A7
FJ20	A7
FJ21	A5
FJ22	A5
FJ23	A5
FJ24	A5
FJ25	A5
FJ26	A5
FK00	B1
FK01	B1
FK02	B1
FK03	B1
FK04	B1
FK05	B1
FK06	B1
FK07	C1
FK08	C1
FK09	C1
FK10	B1
FK11	A1
FM01	C4
FM02	C4
FM03	C4
FM04	C4
FM05	C4
FN01	A6
FN02	A6
FN03	A6
FN04	A7
FN05	A7
FN06	A7
FN07	A7
FN08	A7
FN09	A7
FN10	A7
FN11	B6
FN12	A6
FN13	A6
FN14	A6
FN15	A6
FN16	A6
FN17	A6
FN18	B6
FN19	B5
FN20	A7
FN21	A7
FN22	A7
FN23	A7
FN24	A6
FN25	B6
FN26	A7
FN27	A7
FN28	A7
FN29	A7
FN30	A7
FN31	A7
FN32	A7
FN33	A7
FN34	A7
FN35	A7
FP01	A6
FP02	A6
FP03	A6
FP04	A6
FP05	A6
FP06	A6
FP07	A6
FP08	A7
FP09	A7
FP10	A7
FP11	A7
FP12	A7
FP13	A6
FP14	A7
FP15	A6
FP16	A6
FP17	A7
I101	D2
I102	C2
I103	C2
I104	C2
I105	C2
I106	C2
I107	C2
I108	C2
I109	C2
I110	C2
I111	C1
I112	D2
I113	D2
I201	A2
I202	A2
I203	B2
I204	B2
I205	B2
I206	B2
I207	B2
I208	B2
I209	B2
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I211	A3
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I229	B2
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I234	B2
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I237	B2
I238	A2
I239	A3
I240	A3
I241	A2
I242	A2
I243	A3
I244	B3
I246	A3
I247	A3
I248	A3
I254	C3
I255	B3
I256	B3
I257	B3
I258	B2
I259	B3
I262	B2
I264	A2
I265	B3
I266	B3
I267	B3
I268	B3
I269	A2
I270	B3
I271	A3
I272	B3
I273	C3
I274	A1
I275	A3
I277	A3
I278	A3
I283	B3
I284	B3
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I290	A2
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I293	A2
I294	A2
I297	A1
I298	B3
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I443	B3
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I450	A3
I451	A3
I452	A3
I453	A1
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I612	A1
I613	A1
I614	A1
I615	A1
I616	A1
I617	A2
I618	A1
I619	A1
I705	A3
I706	A4
I708	A5
I709	A5
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I742	B3
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I752	A5
I753	A5
I754	A5
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I756	A6
I757	A5
I758	A5
I759	A5
I760	A6
I800	C6
I801	C5
I802	B5
I803	B5
I804	B6
I805	B5
I806	B5
I807	B5
I808	B5
I809	B5
I810	B5
I811	C7
I812	C6
I813	B7
I815	C6
I816	C6
I817	C6
I818	C4
I819	B5
I820	B6
I821	B5
I822	B5
I900	B7
I901	B6
I902	C6
I903	C6
I904	B6
I905	B6
I906	C5
IA00	C6
IA03	B4
IA05	C6
IA06	C6
IA07	C6
IA08	B5
IA09	B6
IB02	B7
IB03	B7
ID00	C7
ID01	D7
ID02	C7
ID03	C7
ID04	C7
ID05	C7
ID06	C7
ID07	C7
ID08	C7
ID09	C7
ID10	C7
ID11	C7
ID12	C7
ID13	C6
ID14	C6
ID15	C7
ID16	C7
ID17	C7
ID18	C7
ID19	C7
ID20	C7
ID21	C7
ID22	C6
IE00	D4
IE01	C4
IE02	D5
IE03	C6
IE04	C5
IE05	C5
IE06	C4
IE07	C4
IE08	C4
IE09	C5
IE10	C5
IE11	C5
IE12	C5
IE13	D5
IE14	D4
IE15	D4
IE16	C4
IE17	C4
IE18	C4
IE19	D5
IE20	D5
IE21	D5
IE22	D5
IE23	C5
IE24	C5
IE25	D5
IE26	D5
IE27	C5
IE28	C4
IE29	C4
IE30	C4
IE31	C5
IE32	C5
IE33	C5
IE34	C5
IE35	D5
IE36	C5
IE37	C5
IF00	D7
IF01	D7
IF02	D7
IF03	D7
IF04	D6
IF05	D6
IF06	D7
IF07	D7
IF08	D7
IF11	D6
IF12	D6
IF13	D7
IF14	D7
IF15	D6
IF17	D7
IF20	D7
IF21	D4
IF22	D6
IF23	D6
IG00	D4
IG01	D4
IG02	D4
IG03	D4
IG04	D3
IG05	D3
IG06	D3
IG07	D3
IG08	D3
IG09	D3
IG10	D3
IG11	D3
IG12	D3
IG13	D2
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IG15	D5
IG16	D6
IG17	D5
IG18	D6
IG19	D5
IG20	D6
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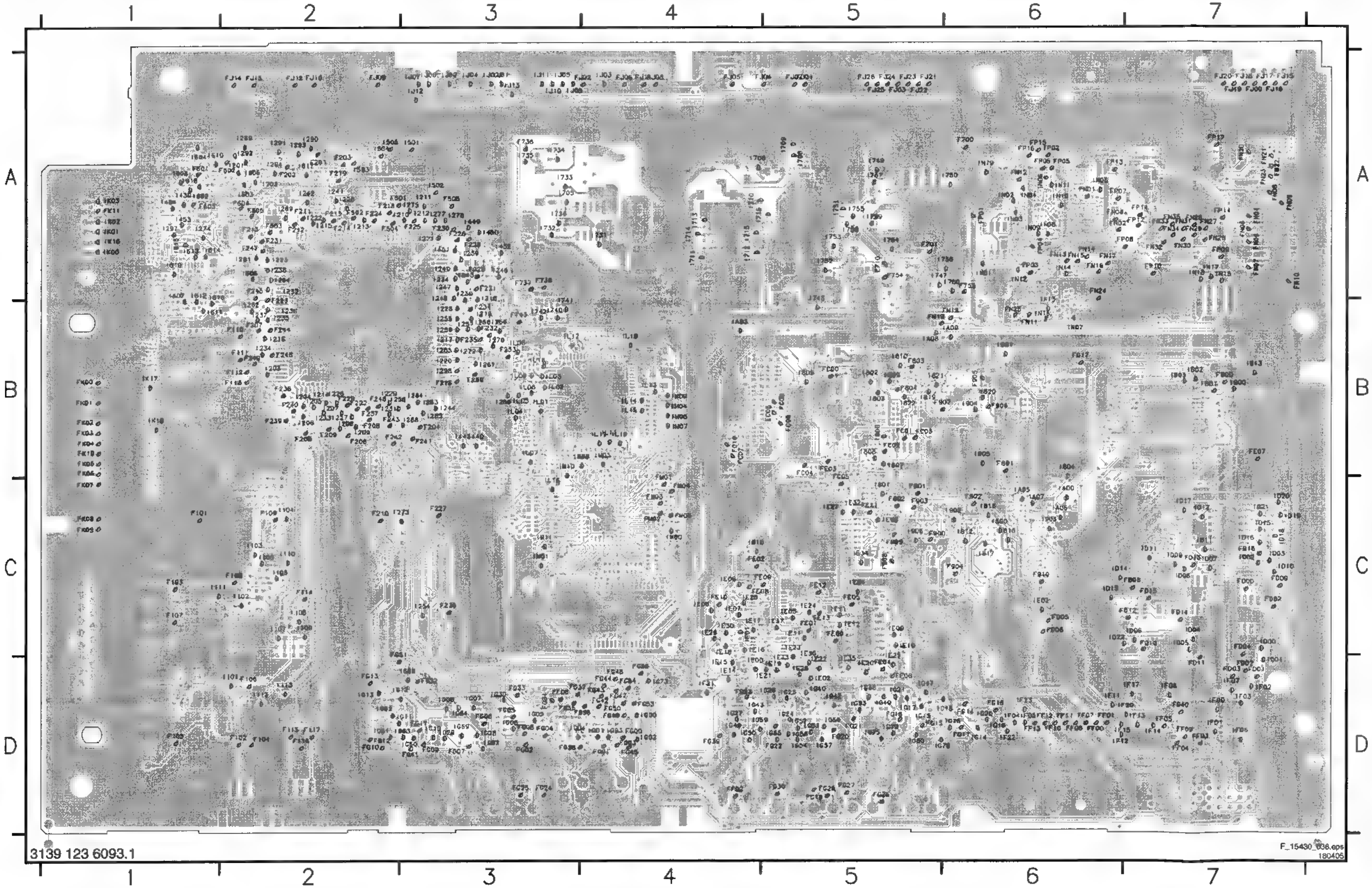
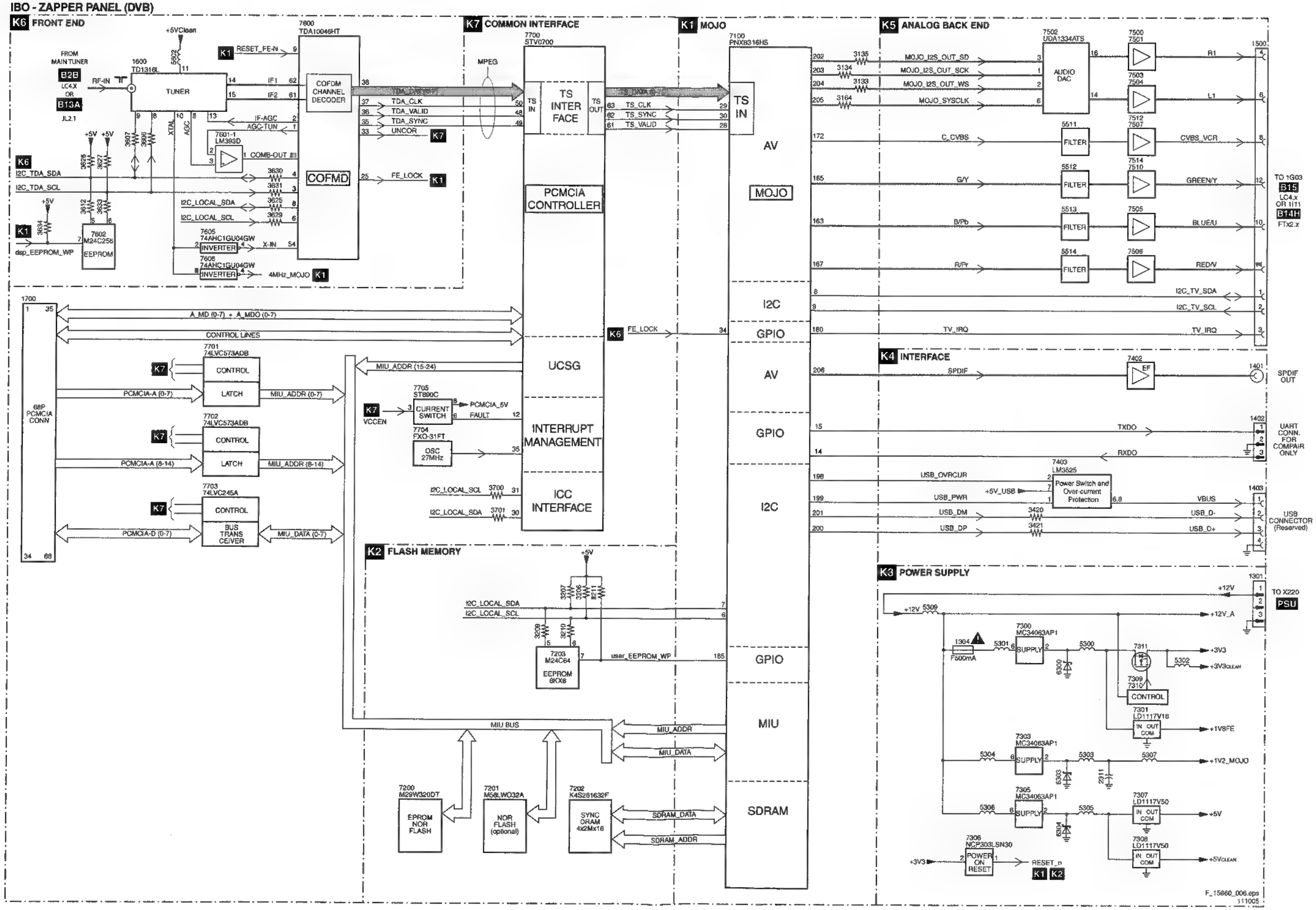
IG23	D5
IG24	D5
IG25	D5
IG26	D5
IG27	D4
IG28	D3
IG29	D3
IG30	D3
IG40	D5
IG42	D5
IG43	D4
IG46	D5
IG47	D5
IG48	D4
IG50	D4
IG52	D5
IG53	D5
IG54	D5
IG55	D5
IG56	D5
IG57	D5
IG58	D5
IG59	D4
IG60	D3
IG61	D2
IG62	D2
IG63	D3
IG64	D3
IG67	D3
IG69	D3
IG73	D4
IG75	D5
IG76	D6
IG78	D5
IG79	D5
IG80	D5
IJ01	A3
IJ02	A3
IJ03	A4
IJ04	A3
IJ05	A3
IJ06	A3
IJ07	A3
IJ08	A3
IJ09	A3
IJ10	A3
IJ11	A3
IJ12	A3
IJ13	A3
IK00	A1
IK01	A1
IK02	A1
IK03	A1
IK16	A1
IK17	B1
IK18	B1
IL01	B3
IL02	B3
IL03	B3
IL04	B3
IL05	B3
IL06	B3
IL07	B3
IL08	B3
IL09	B3
IL10	B4
IL11	B4
IL12	B4
IL13	B4
IL14	B4
IL15	B4
IL16	C3
IL17	B3
IL18	B3
IL19	B4
IM00	C4
IM01	C3
IM03	B4
IM04	B4
IM06	B4
IM07	B4
IM08	B4
IM09	B4
IM10	B3
IM11	C3
IN01	A6
IN02	A6
IN03	A6
IN04	A6
IN05	A6
IN06	A6
IN07	B6
IN08	A6
IN09	A6
IN10	A6
IN11	A6
IN12	A6
IN13	B6
IN14	A6
IN15	B6
IN16	A7
IN17	A7
IN18	A7
IN19	A6



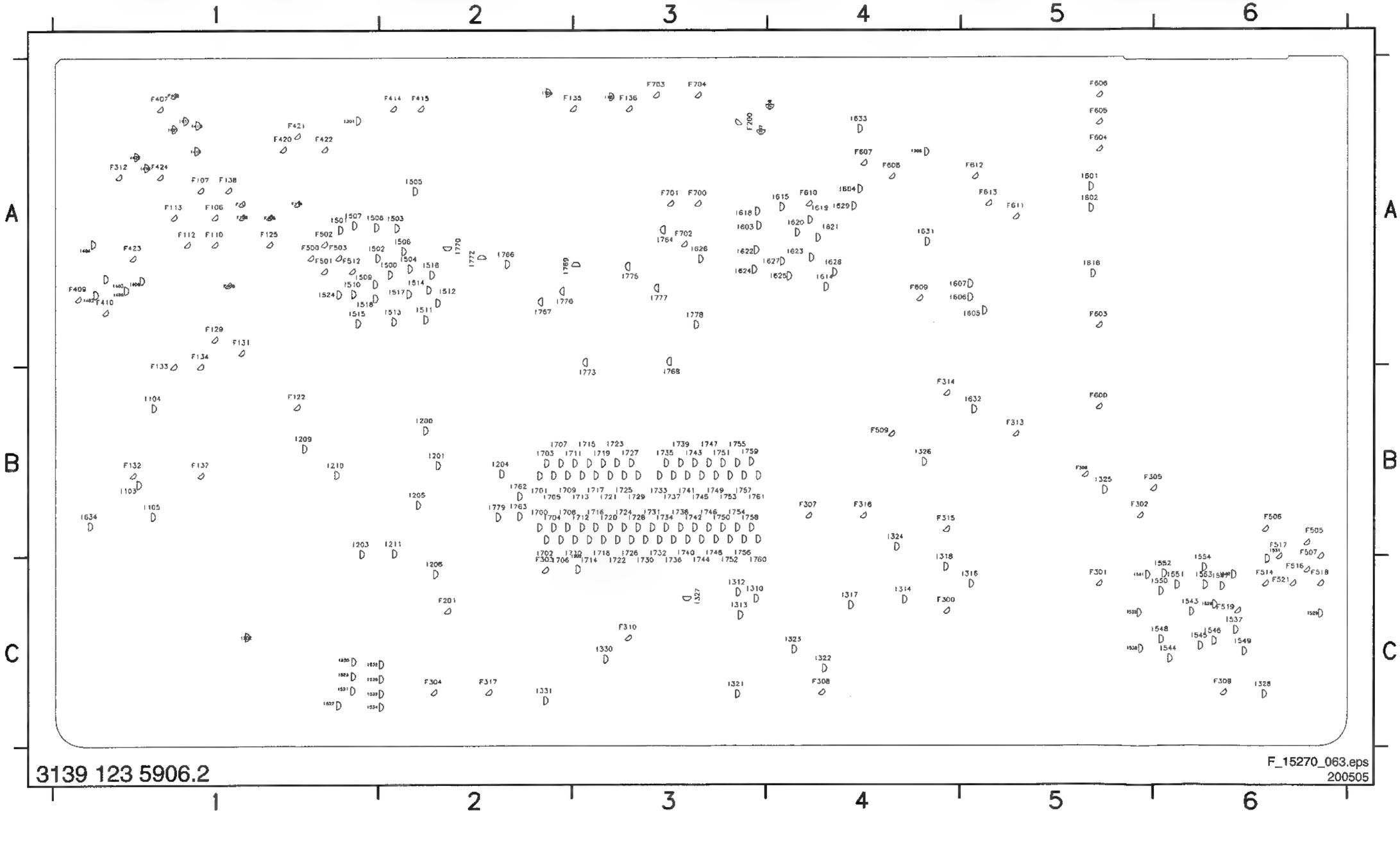
Block Diagram IBO Zapper

IBO - ZAPPER PANEL (DVB)

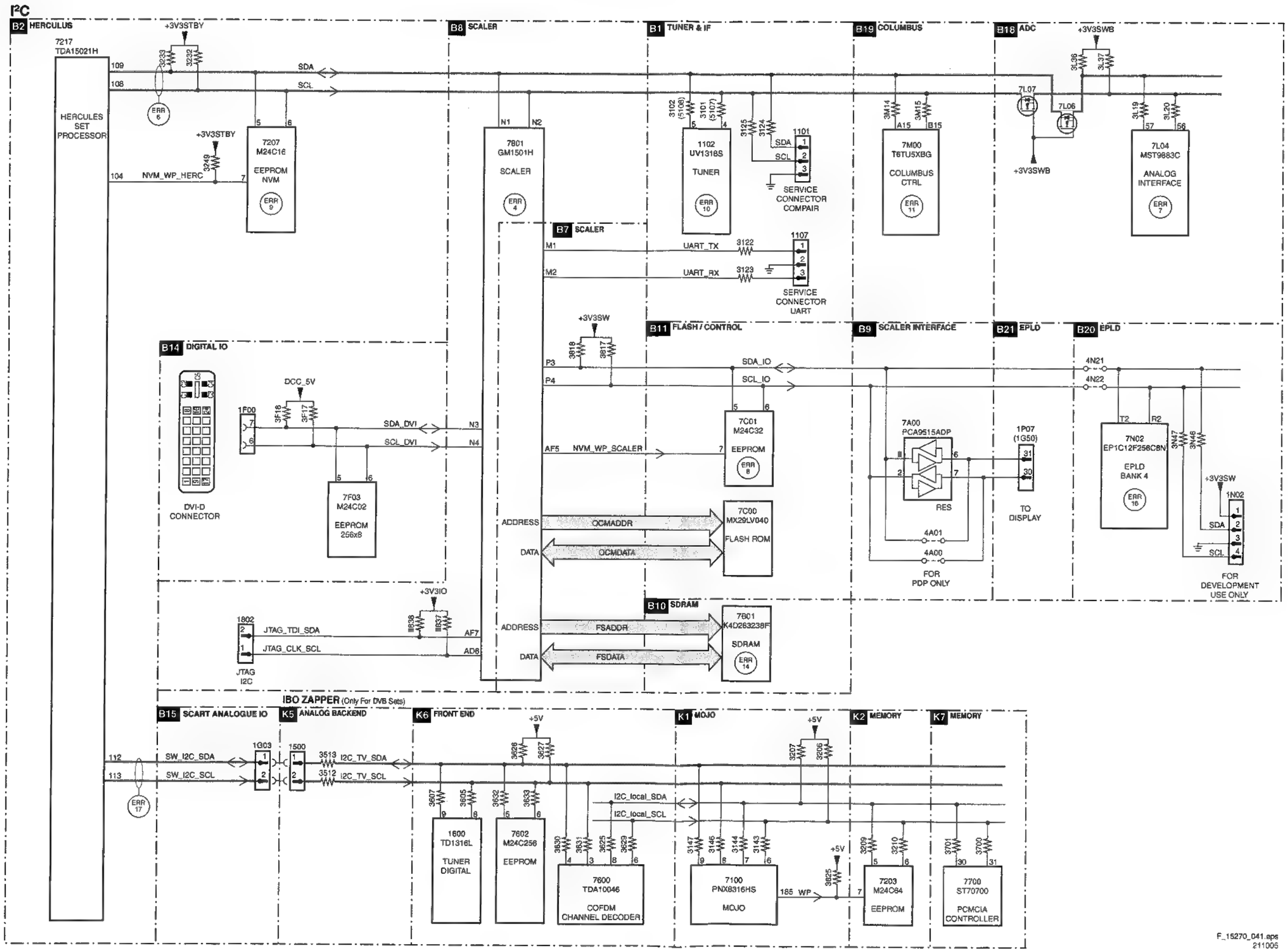


Testpoint Overview IBO Zapper (Bottom Side)

F105 A1	F134 A1	F309 C6	F422 A1	F519 C6	F702 A3	I208 A4	I323 C4	I419 A1	I513 A2	I533 C1	I552 C6	I621 A4	I703 B2	I719 B3	I735 B3	I751 B3	I768 B3
F106 A1	F135 A2	F310 C3	F423 A1	F521 C6	F703 A3	I209 B1	I324 B4	I420 A1	I514 A2	I534 C1	I553 C6	I622 A3	I704 B2	I720 B3	I736 C3	I752 B3	I769 A2
F107 A1	F136 A3	F312 A1	F424 A1	F600 B5	F704 A3	I210 B1	I325 B5	I421 A1	I515 A1	I535 C1	I554 C6	I623 A4	I705 B2	I721 B3	I737 C3	I753 B3	I770 A2
F108 A1	F137 B1	F313 B5	F500 A1	F603 A5	I100 A2	I211 B2	I326 B4	I500 A2	I516 A2	I537 C6	I601 A5	I624 A3	I706 C2	I722 B3	I738 C3	I754 B3	I772 A2
F109 A1	F138 A1	F314 B4	F501 A1	F604 A5	I101 A3	I301 A1	I327 C3	I501 A1	I517 A2	I538 C5	I602 A5	I625 A4	I707 B2	I723 B3	I739 B3	I755 B3	I775 B3
F110 A1	F200 A3	F315 B4	F502 A1	F605 A5	I103 B1	I302 C3	I328 C6	I502 A1	I518 A1	I541 C5	I603 A3	I626 A3	I708 B2	I724 B3	I740 B3	I756 B3	I776 A2
F111 A1	F201 C2	F316 B4	F503 A1	F606 A5	I104 B1	I306 A4	I330 C3	I503 A2	I519 A2	I542 C6	I604 A4	I627 A4	I709 B2	I725 B3	I741 B3	I757 B3	I777 A3
F112 A1	F300 C4	F317 C2	F505 B6	F607 A4	I105 B1	I310 C3	I331 C2	I504 A2	I521 C1	I543 C6	I605 A5	I628 A4	I710 B3	I726 B3	I742 B3	I758 B3	I778 A3
F113 A1	F301 C5	F407 A1	F506 B6	F608 A4	I200 B2	I312 C3	I402 A1	I505 A2	I522 C1	I544 C6	I606 A4	I629 A4	I711 B3	I727 B3	I743 B3	I759 B3	I779 B2
F114 A1	F302 B5	F408 A1	F507 B6	F609 A4	I201 B2	I313 C3	I403 A1	I506 A2	I523 C1	I545 C6	I607 A4	I631 A4	I712 B3	I728 B3	I744 C3	I760 C3	
F122 B1	F303 C2	F409 A1	F509 B4	F610 A4	I202 C1	I314 C3	I404 A1	I507 A1	I524 A1	I546 C6	I614 A4	I632 B5	I713 B3	I729 B3	I745 B3	I761 B3	
F125 A1	F304 C2	F410 A1	F512 A1	F611 A5	I203 C1	I316 C3	I405 A1	I508 A1	I530 C6	I547 C6	I615 A4	I633 A4	I714 B3	I730 C3	I746 B3	I762 B2	
F129 A1	F305 B5	F414 A2	F514 C6	F612 A5	I204 B2	I317 C4	I406 A1	I509 A1	I529 C6	I548 C6	I616 A5	I634 B1	I715 B3	I731 B3	I747 B3	I763 B2	
F131 A1	F306 B5	F415 A2	F516 C6	F613 A5	I205 B2	I318 C4	I416 A1	I510 A1	I549 C6	I549 C6	I618 A3	I700 B2	I716 B3	I732 B3	I748 B3	I764 A2	
F132 B1	F307 B4	F420 A1	F517 B6	F700 A3	I206 C2	I321 C3	I417 A1	I511 A2	I531 B6	I550 C6	I619 A4	I701 B2	I717 B3	I733 B3	I749 B3	I766 A2	
F133 A1	F308 C4	F421 A1	F518 C6	F701 A3	I207 A3	I322 C4	I418 A1	I512 A2	I532 C1	I551 C6	I620 A4	I702 B2	I718 B3	I734 B3	I750 B3	I767 A2	



I2C Overview



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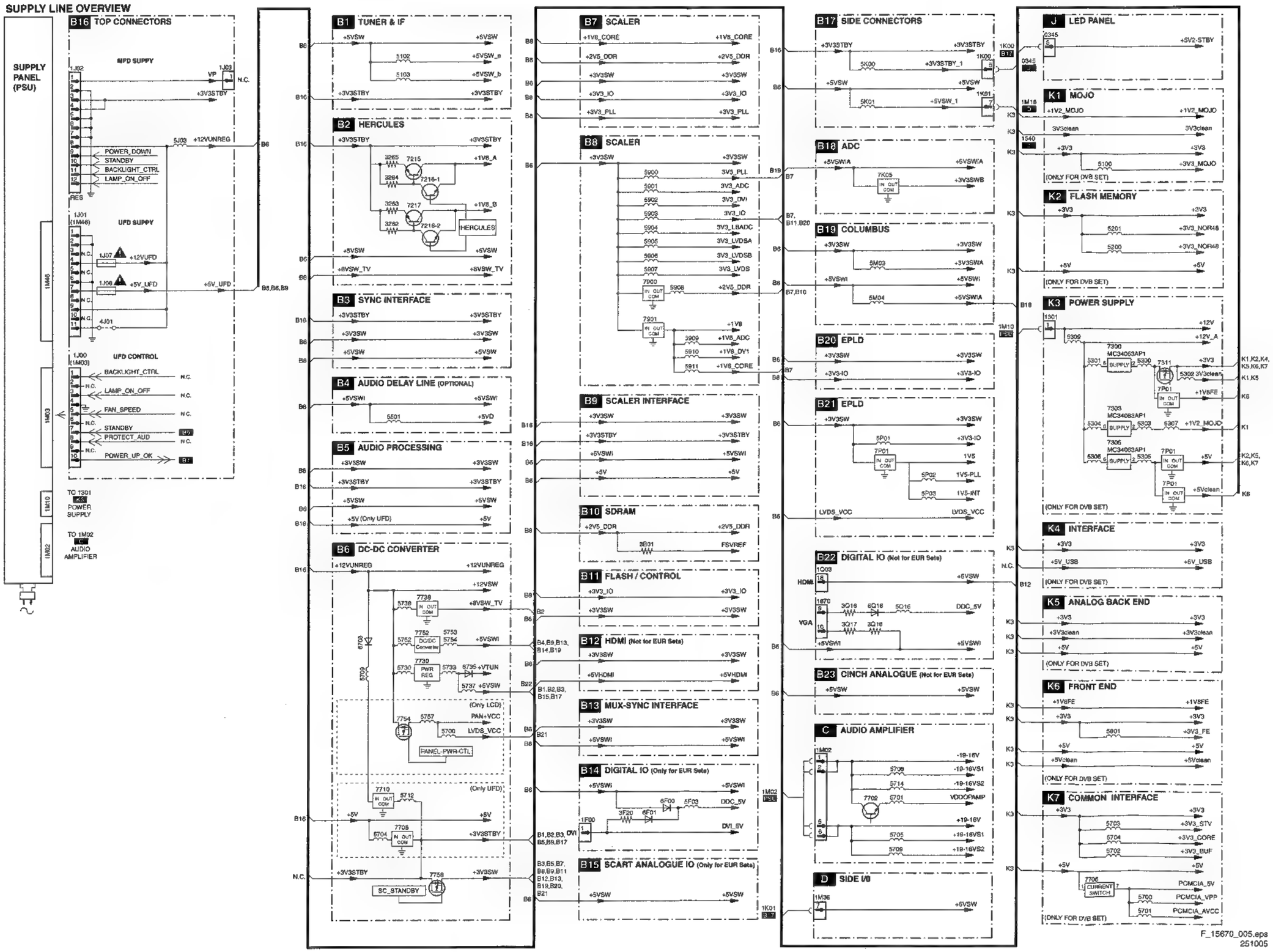
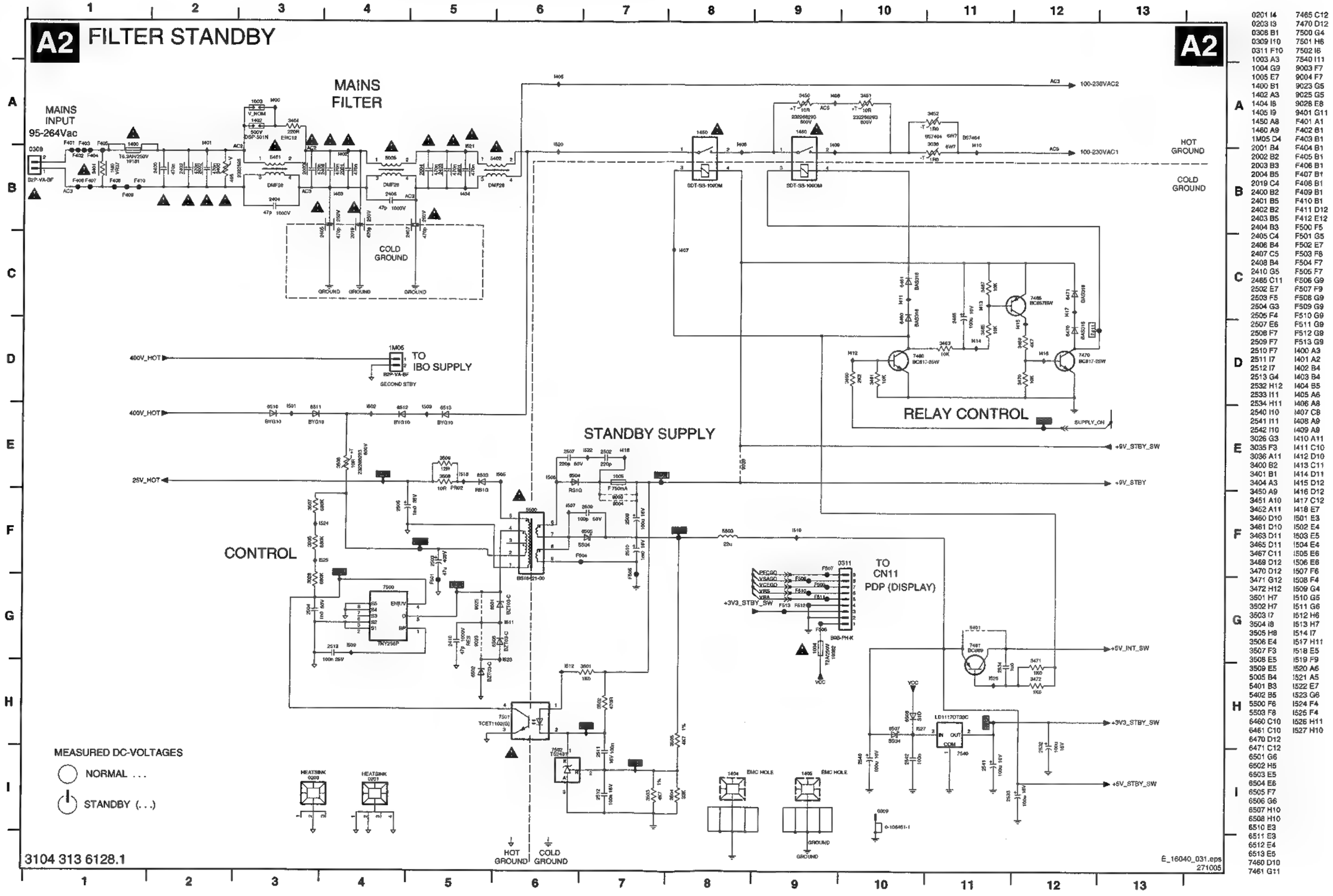
Supply Voltage Overview



7. Circuit Diagrams and PWB Layouts

PDP FHP Supply: Filter Standby



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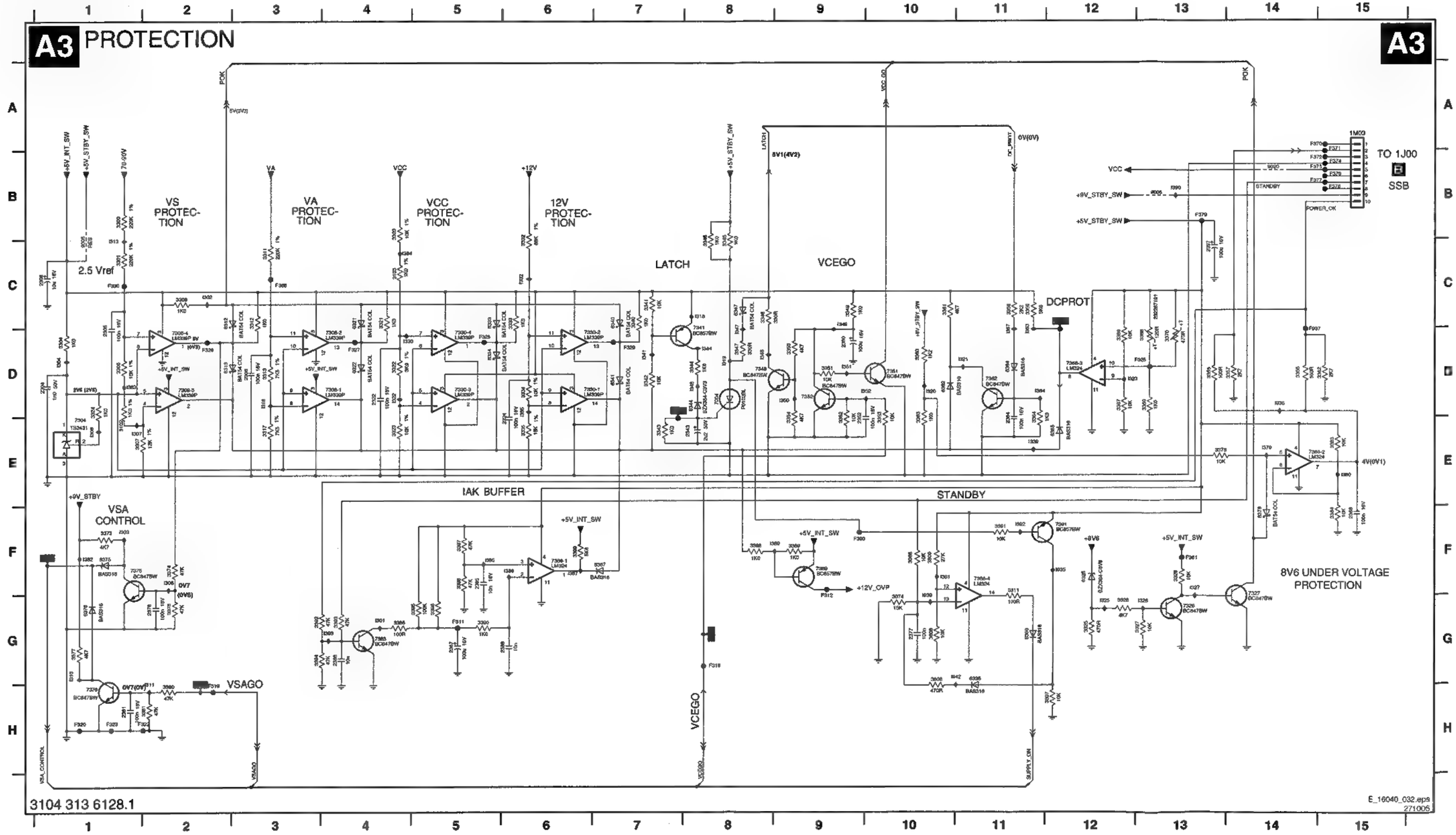
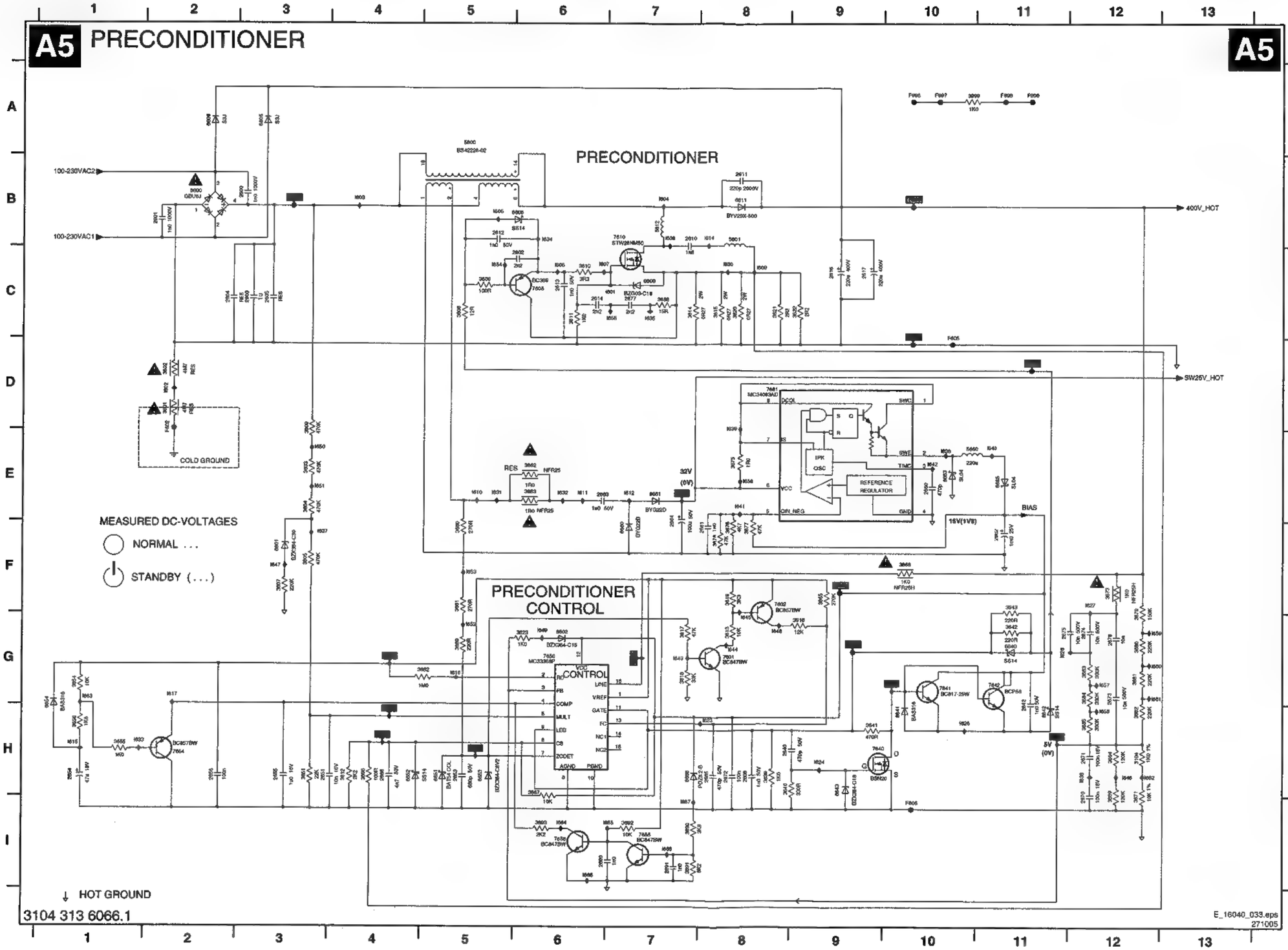
0203 I3 7470 D12
0308 B1 7500 G4
0309 I10 7501 H6
0311 F10 7502 I6
1003 A3 7540 I11
1004 G9 9003 F7
1005 E7 9004 F7
1400 B1 9023 G5
1402 A3 9025 G5
1404 I8 9026 E8
1405 I9 9401 G11
1450 A8 F401 A1
1460 A9 F402 B1
1M05 D4 F403 B1
2001 B4 F404 B1
2002 B2 F405 B1
2003 B3 F406 B1
2004 B5 F407 B1
2019 C4 F408 B1
2400 B2 F409 B1
2401 B5 F410 B1
2402 B2 F411 D12
2403 B5 F412 E12
2404 B3 F500 F5
2405 C4 F501 G5
2406 B4 F502 E7
2407 C5 F503 F6
2408 B4 F504 F7
2410 G5 F505 F7
2485 C11 F506 G9
2502 E7 F507 F9
2503 F5 F508 G9
2504 G3 F509 G9
2505 F4 F510 G9
2507 E6 F511 G9
2508 F7 F512 G9
2509 F7 F513 G9
2510 F7 I400 A3
2511 I7 I401 A2
2512 I7 I402 B4
2513 G4 I403 B4
2532 H12 I404 B5
2533 I11 I405 A6
2534 H11 I406 A8
2540 I10 I407 C8
2541 I11 I408 A9
2542 I10 I409 A9
3026 G3 I410 A11
3035 F3 I411 C10
3036 A11 I412 D10
3400 B2 I413 C11
3401 B1 I414 D11
3404 A3 I415 D12
3450 A9 I416 D12
3451 A10 I417 C12
3452 A11 I418 E7
3460 D10 I501 E3
3461 D10 I502 E4
3463 D11 I503 E5
3465 D11 I504 E4
3467 C11 I505 E6
3469 D12 I506 E8
3470 D12 I507 F6
3471 G12 I508 F4
3472 H12 I509 G4
3501 H7 I510 G5
3502 H7 I511 G6
3503 I7 I512 H6
3504 I8 I513 H7
3505 H8 I514 I7
3506 E4 I517 H11
3507 F3 I518 E5
3508 E5 I519 F9
3509 E5 I520 A6
5005 B4 I521 A5
5401 B3 I522 E7
5402 B5 I523 G6
5500 F6 I524 F4
5503 F8 I525 F4
6460 C10 I526 H11
6461 C10 I527 H10
6470 D12
6471 C12
6501 G6
6502 H5
6503 E5
6504 E6
6505 F7
6506 G6
6507 H10
6508 H10
6510 E3
6511 E3
6512 E4
6513 E5
7460 D10
7461 G11

PDP FHP Supply: Protection

1M03 A15 2304 D1 2305 D1 2306 D3 2322 D4 2324 E6 2343 E8 2350 D9 2362 E9 2364 E11 2367 D12 2368 D13 2369 D13 2370 D13 2373 F1 2374 F2 2376 G2 2377 G10 2378 G10 2379 F10 2380 F10 2381 F11 2382 G3 2383 G4 2384 G3 2385 G5 2396 G5 2398 F5 2399 F6 2611 F11 2807 H12 2808 G10 2809 F10 2811 F11 2812 C2 2821 C4 2822 D7 2823 E7 2824 D8 2825 C8 2826 F8 2827 F5 2828 F5 2829 F5 2830 D6 2831 D5 2832 D4 2833 C5 2834 D5 2835 G11 2836 C7 2837 D7 2838 D7 2839 E6 2840 D6 2841 C6 2842 D6 2843 C6 2844 D6 2845 C6 2846 C6 2847 C6 2848 C6 2849 C6 2850 C6 2851 C6 2852 C6 2853 C6 2854 C6 2855 C6 2856 C6 2857 C6 2858 C6 2859 C6 2860 C6 2861 C6 2862 C6 2863 C6 2864 C6 2865 C6 2866 C6 2867 C6 2868 C6 2869 C6 2870 C6 2871 C6 2872 C6 2873 C6 2874 C6 2875 C6 2876 C6 2877 C6 2878 C6 2879 C6 2880 C6 2881 C6 2882 C6 2883 C6 2884 C6 2885 C6 2886 C6 2887 C6 2888 C6 2889 C6 2890 C6 2891 C6 2892 C6 2893 C6 2894 C6 2895 C6 2896 C6 2897 C6 2898 C6 2899 C6 2900 C6 2901 C6 2902 C6 2903 C6 2904 C6 2905 C6 2906 C6 2907 C6 2908 C6 2909 C6 2910 C6 2911 C6 2912 C6 2913 C6 2914 C6 2915 C6 2916 C6 2917 C6 2918 C6 2919 C6 2920 C6 2921 C6 2922 C6 2923 C6 2924 C6 2925 C6 2926 C6 2927 C6 2928 C6 2929 C6 2930 C6 2931 C6 2932 C6 2933 C6 2934 C6 2935 C6 2936 C6 2937 C6 2938 C6 2939 C6 2940 C6 2941 C6 2942 C6 2943 C6 2944 C6 2945 C6 2946 C6 2947 C6 2948 C6 2949 C6 2950 C6 2951 C6 2952 C6 2953 C6 2954 C6 2955 C6 2956 C6 2957 C6 2958 C6 2959 C6 2960 C6 2961 C6 2962 C6 2963 C6 2964 C6 2965 C6 2966 C6 2967 C6 2968 C6 2969 C6 2970 C6 2971 C6 2972 C6 2973 C6 2974 C6 2975 C6 2976 C6 2977 C6 2978 C6 2979 C6 2980 C6 2981 C6 2982 C6 2983 C6 2984 C6 2985 C6 2986 C6 2987 C6 2988 C6 2989 C6 2990 C6 2991 C6 2992 C6 2993 C6 2994 C6 2995 C6 2996 C6 2997 C6 2998 C6 2999 C6 3000 C6 3001 C6 3002 C6 3003 C6 3004 C6 3005 C6 3006 C6 3007 C6 3008 C6 3009 C6 3010 C6 3011 C6 3012 C6 3013 C6 3014 C6 3015 C6 3016 C6 3017 C6 3018 C6 3019 C6 3020 C6 3021 C6 3022 C6 3023 C6 3024 C6 3025 C6 3026 C6 3027 C6 3028 C6 3029 C6 3030 C6 3031 C6 3032 C6 3033 C6 3034 C6 3035 C6 3036 C6 3037 C6 3038 C6 3039 C6 3040 C6 3041 C6 3042 C6 3043 C6 3044 C6 3045 C6 3046 C6 3047 C6 3048 C6 3049 C6 3050 C6 3051 C6 3052 C6 3053 C6 3054 C6 3055 C6 3056 C6 3057 C6 3058 C6 3059 C6 3060 C6 3061 C6 3062 C6 3063 C6 3064 C6 3065 C6 3066 C6 3067 C6 3068 C6 3069 C6 3070 C6 3071 C6 3072 C6 3073 C6 3074 C6 3075 C6 3076 C6 3077 C6 3078 C6 3079 C6 3080 C6 3081 C6 3082 C6 3083 C6 3084 C6 3085 C6 3086 C6 3087 C6 3088 C6 3089 C6 3090 C6 3091 C6 3092 C6 3093 C6 3094 C6 3095 C6 3096 C6 3097 C6 3098 C6 3099 C6 3100 C6 3101 C6 3102 E1 3103 C4 3300 B1 3301 C1 3302 C2 3303 C2 3304 D1 3305 E5 3306 D1 3307 E1 3308 C2 3309 C3 3310 C3 3311 C3 3312 C3 3313 D3 3314 D3 3315 E3 3316 B4 3317 E3 3318 F13 3319 C6 3320 C6 3321 C4 3322 D4 3323 E4 3324 D1 3325 G12 3326 G12 3327 G13 3328 F13 3329 C6 3330 C6 3331 C6 3332 C6 3333 C6 3334 D6 3335 E6 3336 C6 3337 C6 3338 C6 3339 C6 3340 C7 3341 C7 3342 D7 3343 E7 3344 D6 3345 C6 3346 C6 3347 D8 3348 C6 3349 C6 3350 D9 3351 D9 3352 E9 3353 E10 3354 E9 3355 D13 3356 D14 3357 D14 3358 C11 3359 C11 3360 D10 3361 C10 3362 D15 3363 E10 3364 E11 3365 C10 3366 D12 3367 D12 3368 D13 3369 D13 3370 D13 3373 F1 3374 F2 3376 G2 3377 G1 3378 E13 3379 H2 3380 H2 3381 H2 3382 E15 3383 E15 3384 F15 3385 G4 3386 F8 3389 F9 3390 G5 3391 F11 3392 G3 3393 G4 3394 G3 3395 G5 3396 G5 3397 F5 3398 F5 3399 F6 6302 D4 6303 D4 6304 D4 6305 D4 6306 D4 6307 D4 6308 D4 6309 D4 6310 D4 6311 D4 6312 D4 6313 D2 6321 C4 6322 D4 6325 F12 6333 C5 6334 D5 6335 G11 6340 C7 6341 D7 6344 D8 6347 C8 6362 D10 6363 D10 6364 D10 6365 E12 6366 G11 6367 F7 6375 F1 6376 G1 6378 F14 7004 D8 7304 E1 7308-1 D4 7308-2 D4 7308-3 D2 7308-4 D2 7326 G13 7327 G14 7330-1 D6 7330-2 D6 7330-3 D5 7330-4 D5 7340 C8 7345 D8 7351 D10 7352 D9 7352 D11 7363 G4 7366-1 F6 7366-2 E14 7366-3 D12 7366-4 F11 7375 F1 7378 H1 7388 F9 7391 F12 9005 C1 9006 B13 9020 B14 F311 G5 F312 G9 F315 G8 F319 H2 F320 H1 F322 H2 F323 H1 F325 D13 F326 D2 F327 D4 F328 D5 F329 D7 F330 C1 F335 C12 F343 D7 F368 C3 F370 A14 F371 B15 F372 B14 F374 B15 F375 B14 F376 B15 F377 B14 F378 B15 F379 B13 F381 F13 F390 F9 F937 D14 I301 G4 I302 C2 I303 F1 I304 D1 I305 F1 I306 E1 I307 E1 I308 F2 I310 G1 I311 G2 I313 C1 I316 D3 I319 D8 I320 D10 I321 D11 I322 D4 I323 D12 I325 G12 I326 G13 I327 F13 I330 D4 I332 C6 I335 D6 I339 E11 I341 D7 I344 D8 I345 E8 I347 D8 I346 D8 I349 C9 I350 D9 I351 D9 I363 D1 I364 C4 I365 F5 I367 D11 I367 F6 I369 F8 I379 E14 I380 E15 I382 F1 I383 G4 I905 G8 I906 G2 I935 F12 I936 F6 I939 G10 I942 G11 I936 D14 I939 G10 I942 G11 I380 B13 I382 F11



PDP FHP Supply: Pre Conditioner



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2601 B2 3691 I7 I644 G8
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2605 C3 5600 A5 I648 H12
2606 H8 5601 B8 I649 G6
2610 B7 5612 B7 I650 E3
2611 B6 5660 E10 I651 E3
2612 B5 6600 B2 I652 G5
2613 C6 6601 F3 I653 F5
2614 C6 6602 G6 I654 C5
2616 C9 6605 A3 I655 C7
2617 C9 6606 A2 I656 E8
2640 H8 6608 B6 I657 G12
2642 G11 6609 C7 I658 H12
2651 H3 6611 B9 I659 G12
2653 H5 6640 G11 I660 G12
2654 H1 6641 H10 I661 G12
2655 H3 6642 H11 I662 H12
2656 H2 6643 H9 I663 G1
2660 E10 6651 H5 I664 I6
2661 F8 6652 H4 I665 I7
2662 F11 6653 H5 I666 I6
2663 E6 6654 G1 I667 I7
2664 E7 6660 F7 I668 I7
2665 H8 6661 E7
2666 H4 6663 E10
2670 H12 6665 E11
2671 H12 6666 H7
2672 H8 7601 G8
2673 G12 7602 F8
2674 G12 7608 C8
2675 G11 7610 B7
2676 G12 7640 H9
2677 C7 7641 G10
2690 I6 7642 G11
2691 I7 7650 G6
3104 H12 7654 H2
3601 D2 7655 I7
3602 D2 7656 I6
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3609 D3 F606 I10
3610 C6 F608 D11
3611 C6 F609 F9
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3614 C7 F997 A10
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3616 G9 F999 A11
3617 G7 I601 C7
3618 G7 I602 D2
3619 F8 I603 B4
3620 C8 I604 B7
3621 C8 I605 B5
3622 C9 I606 C6
3623 G6 I607 C6
3639 H8 I608 B7
3640 H8 I609 C8
3641 H9 I610 E5
3642 G11 I611 E6
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3652 G5 I614 B8
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3655 H1 I616 G5
3656 H1 I617 G2
3659 G5 I618 H4
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3665 F9 I624 H9
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3673 F12 I630 C8
3675 E8 I631 E5
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3678 F8 I634 B6
3679 F12 I635 C7
3680 G12 I636 H12
3681 G12 I637 F3
3682 H12 I638 E10
3683 G12 I639 D8
3684 G12 I640 E11
3685 H12 I641 E8
3686 C7 I642 E10

PDP FHP Supply: LLC Supply

U13 E8	1083 F11	2012 D9	2024 E12	2034 E1	2044 D11	2070 E7	3001 E6	3011 E5	3021 F5	3032 F14	3044 D1	3057 D12	3071 F2	3089 A4	3100 F14	6003 A3	6018 C8	6034 D2	7001 B3	7012 D7	7093 A4	F009 D6	F296 G13	I008 C2	I018 E2	I028 G3	I038 C8	I049 D8	I060 A10	I072 D11	I083 F9	I095 H6	I289 A5	I299 B11
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0204 H9	2000 G9	2014 F8	2026 F3	2036 D2	2046 C8	2090 B2	3003 C1	3013 F4	3023 E12	3034 F13	3046 E1	3060 C8	3073 D7	3091 B2	5001 C6	6005 D5	6021 F11	6042 C13	7003 A9	7017 F3	F001 A6	F016 B13	F298 H12	I010 D2	I020 E3	I030 E5	I041 B8	I051 E7	I062 B10	I074 F11	I085 E12	I098 H8	I291 H11	
1000 G6	2005 C1	2015 F5	2027 E2	2037 E2	2047 E1	2290 H10	3004 C1	3014 C7	3024 E13	3037 C13	3047 E2	3061 D8	3075 B8	3092 A3	5002 C9	6006 D7	6023 E13	6044 C11	7005 B8	7018 F3	F002 C7	F017 C11	I001 A2	I011 D1	I021 E1	I031 E4	I042 B7	I052 D7	I063 B10	I075 C13	I088 E13	I282 D1	I292 H10	
1001 G7	2006 C2	2016 E8	2028 C11	2038 C13	2048 F6	2291 G11	3005 C2	3015 C7	3025 F13	3038 C13	3048 D1	3064 F3	3076 C8	3093 B2	5004 E9	6007 C7	6027 C7	6045 F11	7006 E8	7020 C8	F003 C5	F040 B14	I002 A3	I012 D4	I022 F2	I032 E6	I043 B7	I053 E7	I064 B8	I077 F11	I089 E12	I283 F14	I293 H11	
1002 H14	2007 F1	2017 C9	2029 G11	2039 D7	2049 C1	2292 H11	3006 D2	3016 C7	3027 F2	3039 C14	3049 D3	3065 E4	3077 E8	3094 A3	5290 G10	6008 D7	6028 E7	6075 B8	7007 C7	7021 D8	F004 C5	F290 H12	I003 A5	I013 D2	I023 F3	I033 F4	I044 B8	I054 E7	I065 C9	I078 C13	I090 E13	I284 E15	I294 D13	
1006 G6	2008 F3	2018 C1	2030 F12	2040 D7	2052 B3	2293 H11	3007 E2	3017 D7	3028 F13	3040 E13	3050 F7	3066 F2	3078 E8	3095 A5	5291 H12	6009 F4	6029 B11	6077 D8	7008 E7	7042 C13	F005 C9	F292 H12	I004 A5	I014 E1	I024 F3	I034 F5	I045 C6	I055 E8	I066 C8	I079 C13	I091 E14	I285 A4	I295 D6	
1008 G8	2009 E5	2020 C11	2031 F15	2041 D8	2053 B5	2294 H11	3008 E2	3018 D7	3029 E13	3041 F13	3052 E12	3067 F5	3080 C12	3096 A5	5292 H12	6010 F4	6031 D2	6095 A5	7009 E4	7090 A2	F006 D8	F293 G12	I005 B2	I015 D2	I025 F2	I035 F6	I046 C7	I056 A2	I067 C8	I080 G10	I092 F13	I286 A4	I296 F6	
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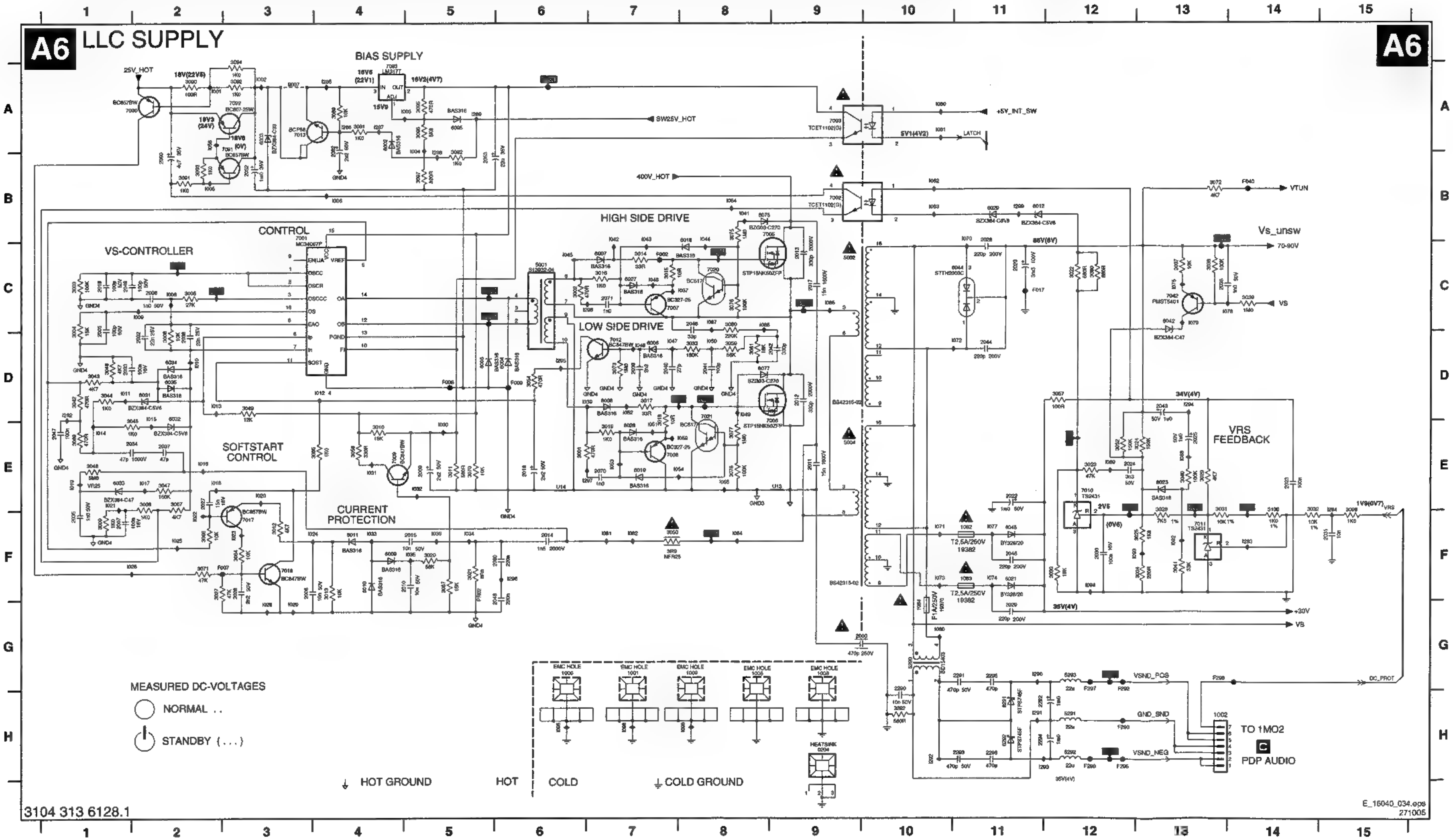
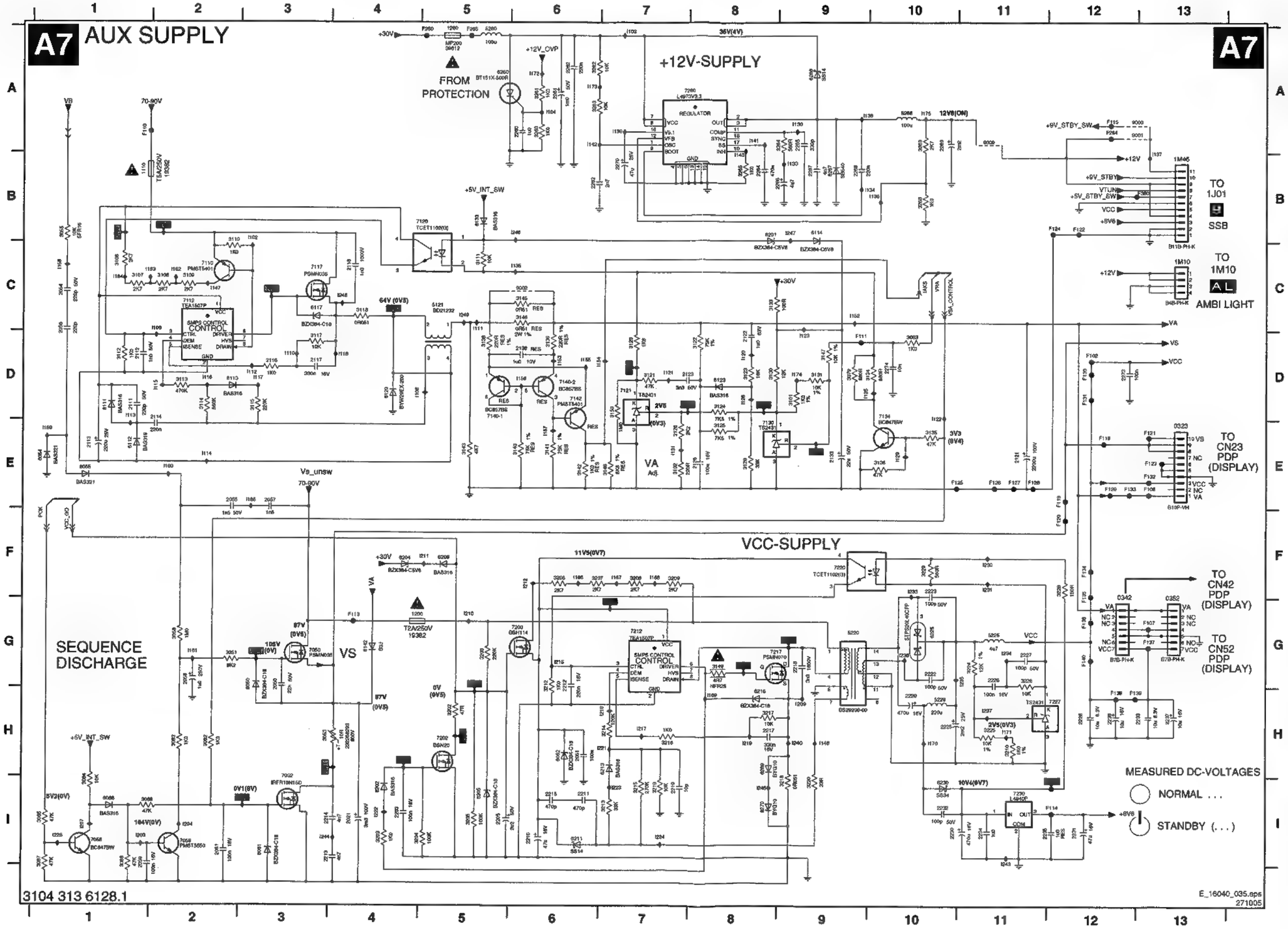


PDP FHP Supply: AUX Supply



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2118 C4	3225 H11	I115 D2
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2122 D8	3228 F12	I117 D3
2123 D7	3229 F10	I118 D4
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2210 I6	3265 B8	I125 D9
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2236 H12	6133 B5	I154 D6
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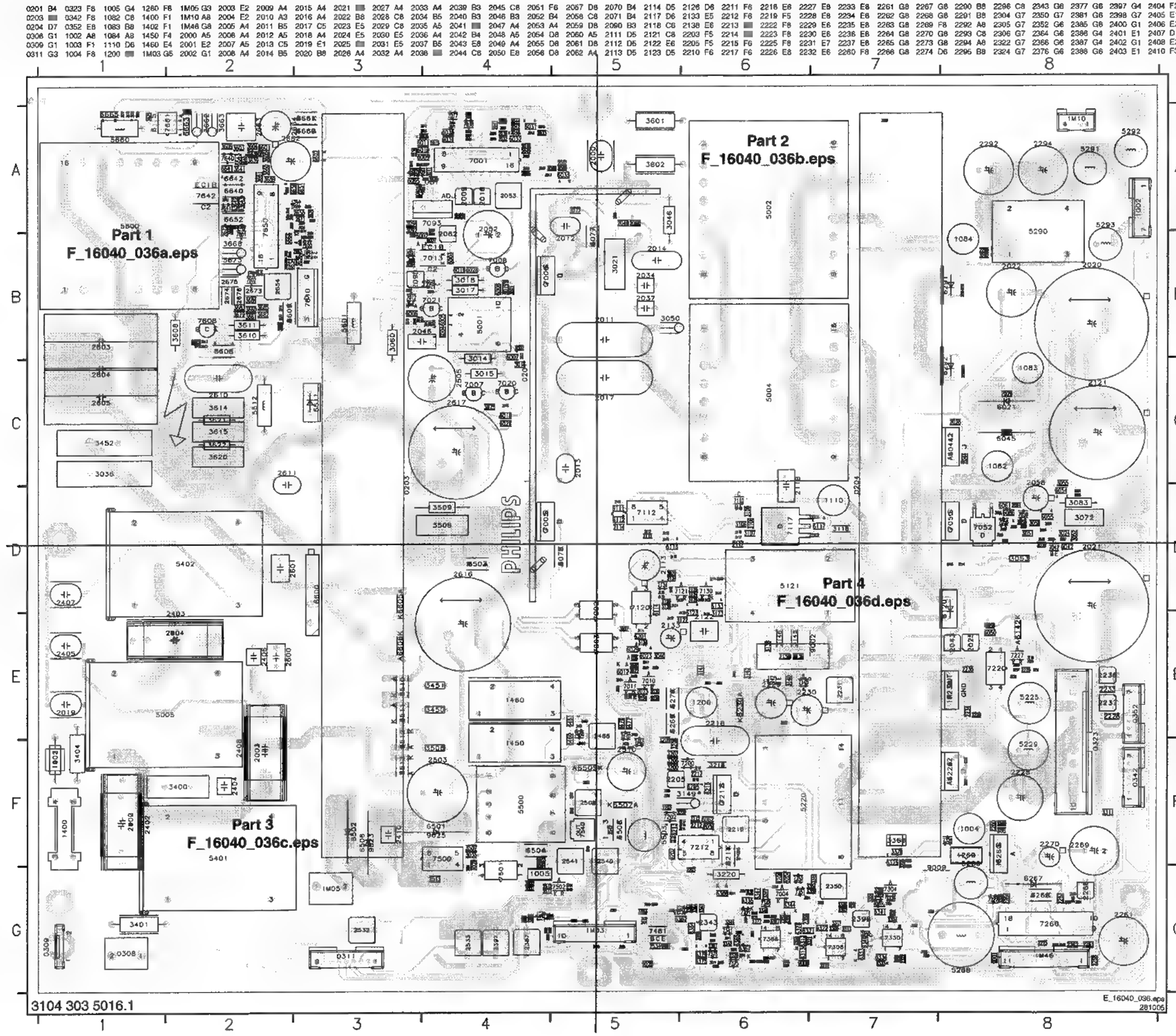
Layout PDP FHP Supply (Overview Top Side)



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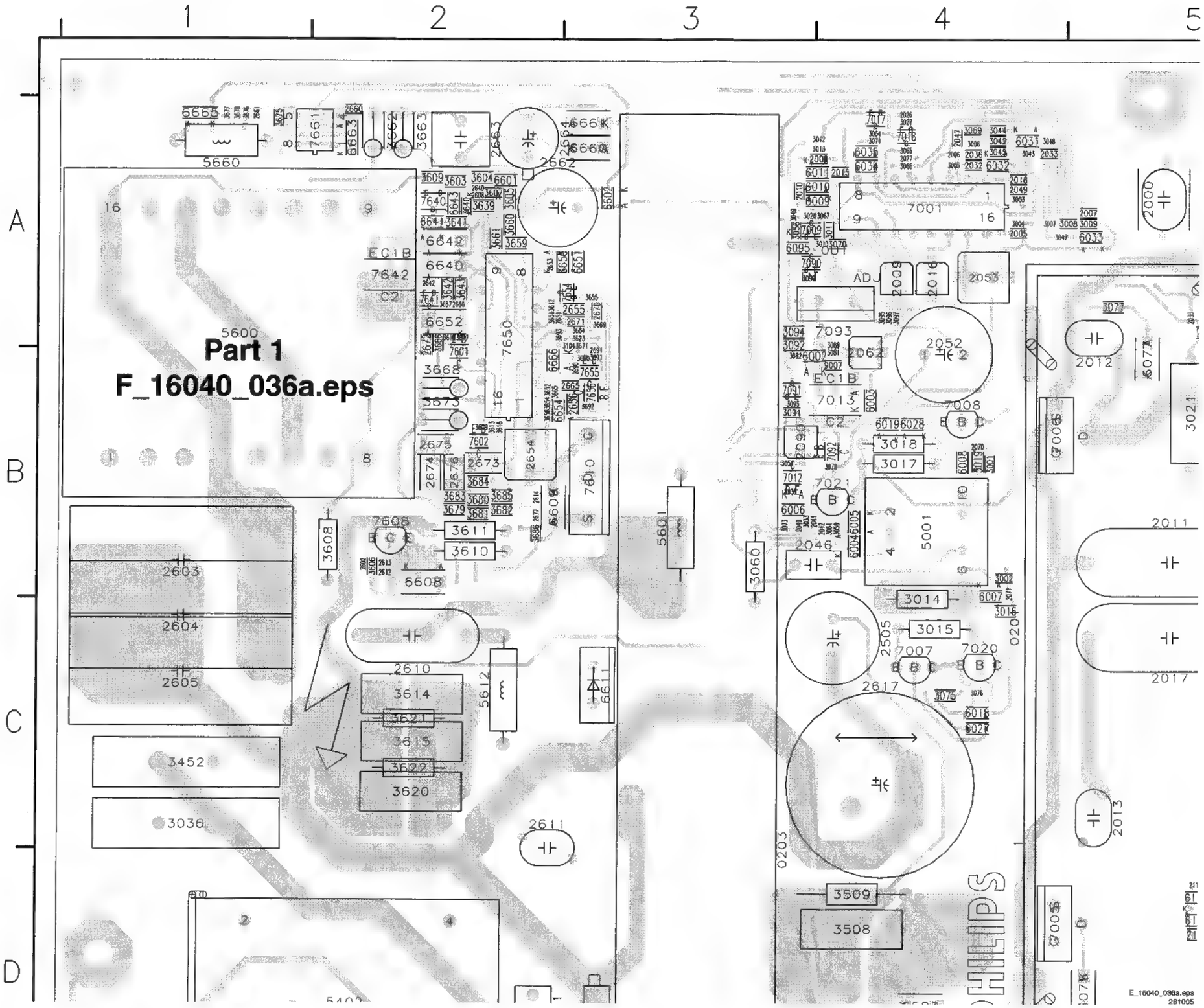

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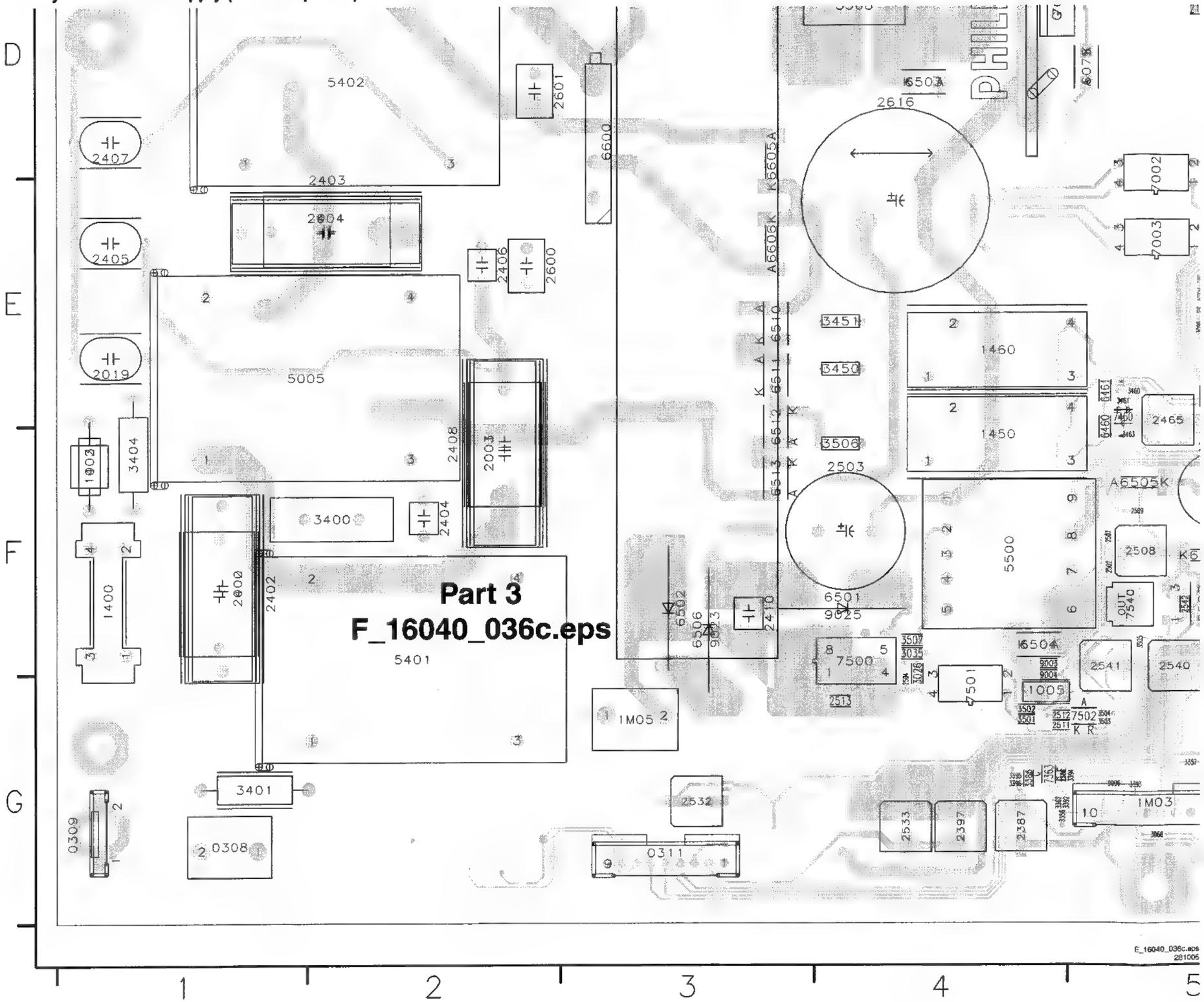

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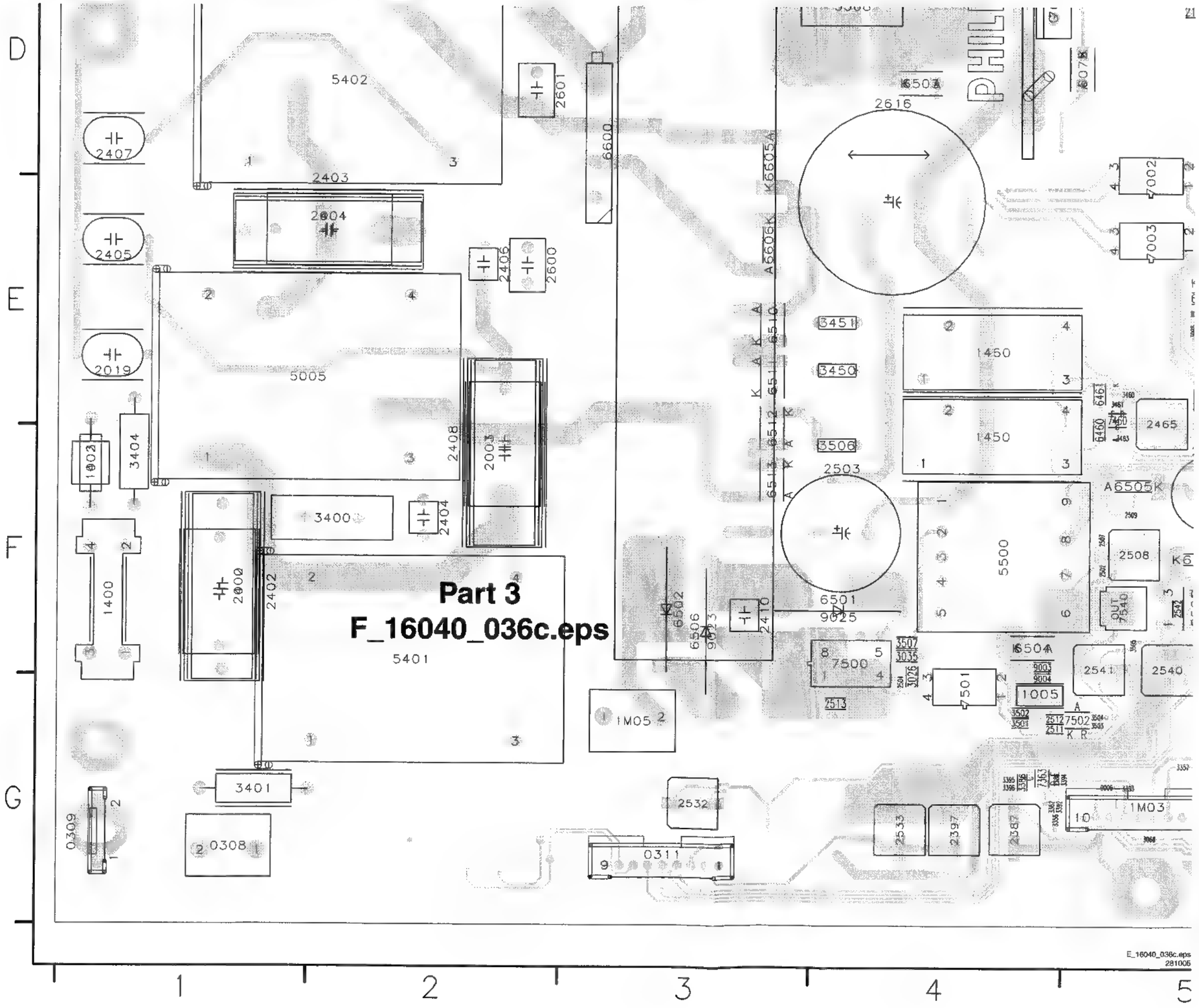

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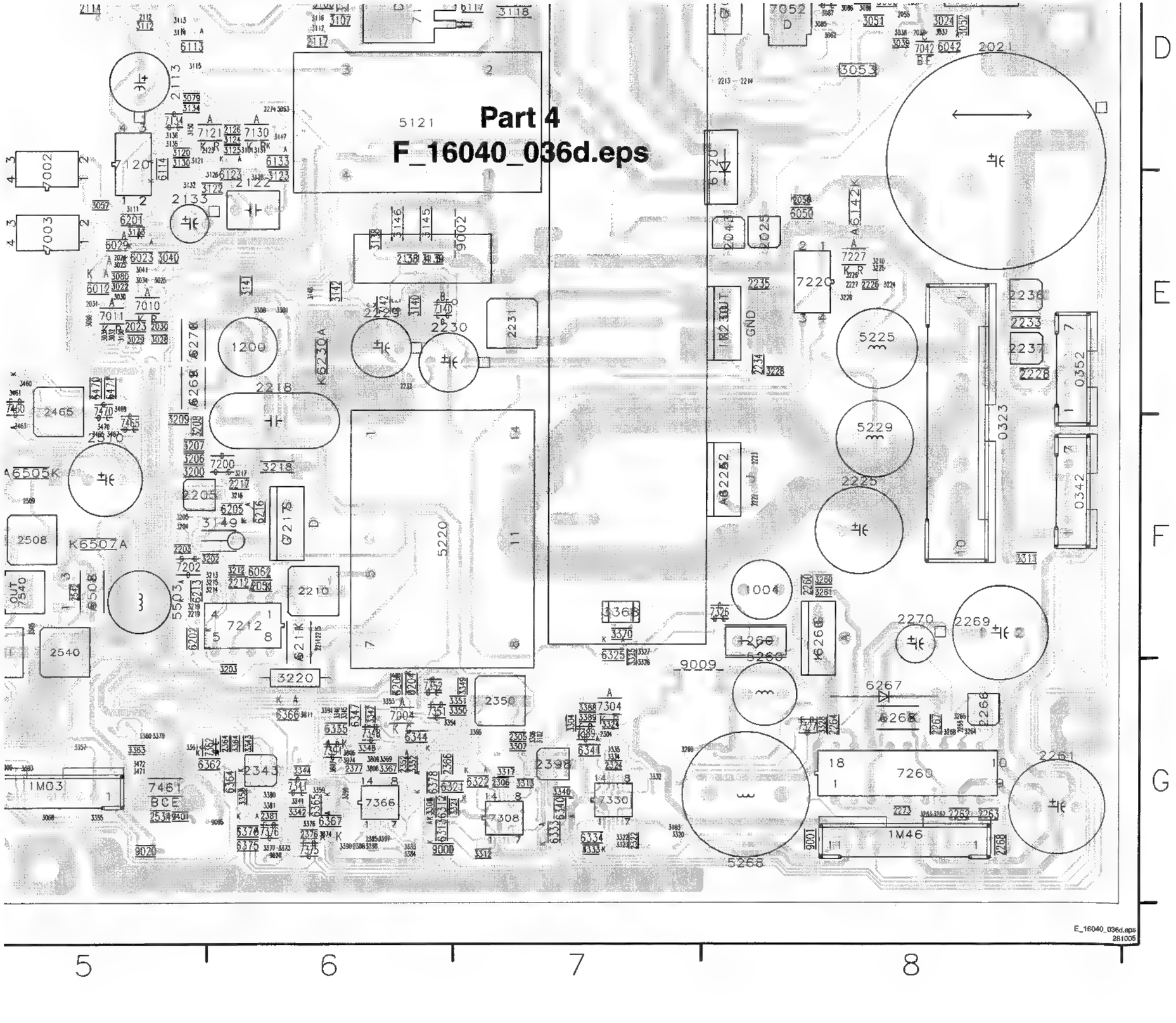

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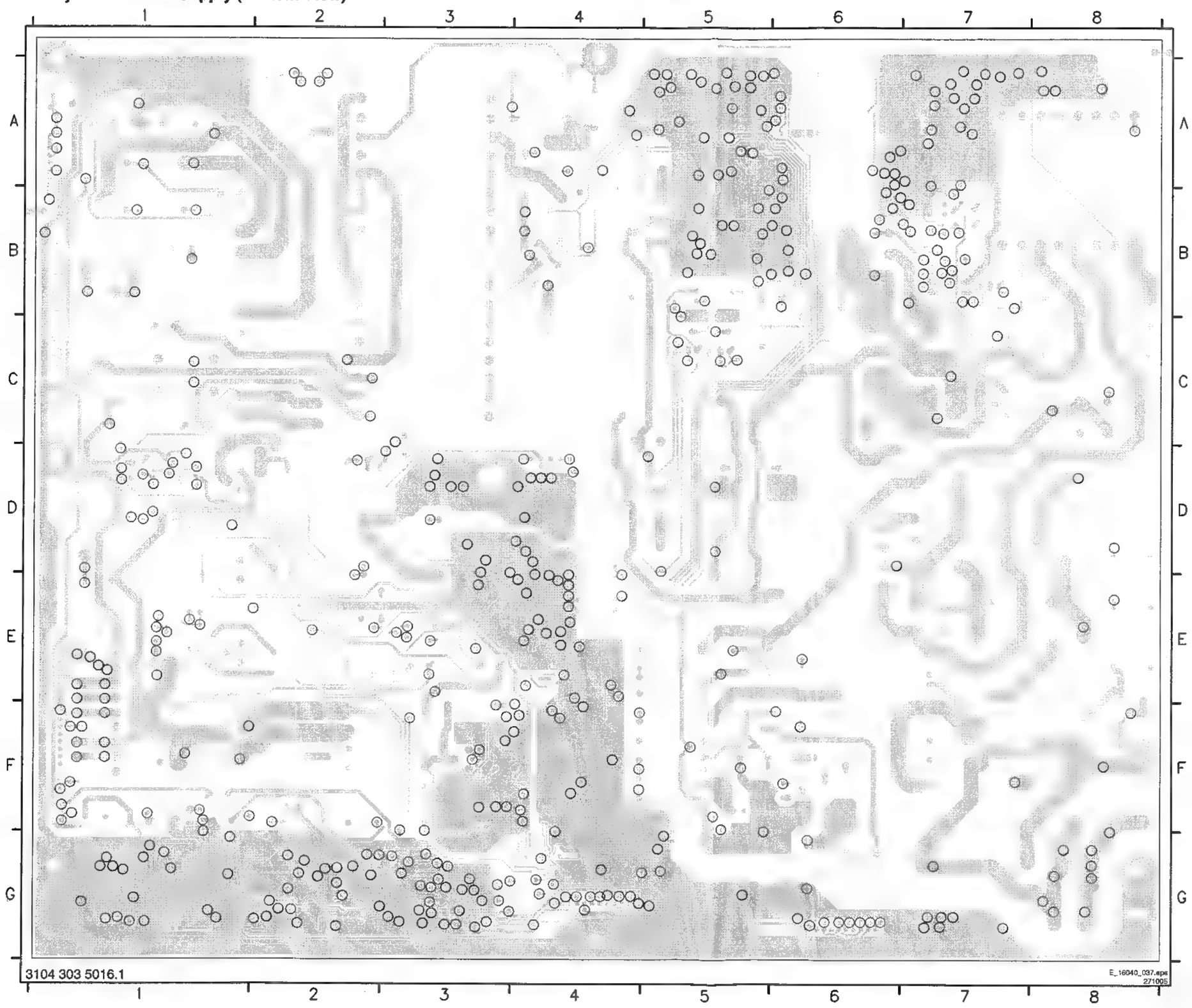


SSB: Tuner and IF

B1 TUNER & IF

*	STANDARD SD2	IDTV SD2	FM RADIO SD2
EUROPE	UV1318S/AI H N3	UV1318SD/A CPHN 3	UR1316S/A I H3
CHINA	UV1318S/AI C H3	-	UR1316S/A I H3
AP(PAL)	UV1316E/A I H4	-	UR1316S/A I H3
NA/LA/AP(NTSC)	UV1338/A F SH4	-	UR1336/A F I S H3

*	EU	AP	CHINA	NAFTA
4102	Y	Y	--	Y
4103	--	--	Y	--
4104	--	Y	--	--
4106	Y	--	Y	--
4110	Y	Y	Y	Y
4111	Y	--	--	--
4113	--	Y	Y	--
4107	--	--	Y	--
4108	--	--	Y	--

*	1104	1105	1106
EUROPE	OFWK3953L	--	OFWK9656L
AP	OFWK7265L	--	OFWK9361L
CHINA	OFWK3956L	OFWK9355L	OFWK9352L
NAFTA	OFWM1967L	--	--

*	Non-EU	EU
3104	0R	10K
6103	-	Yes

1102 UV1318ST/AIH-MK3

RF IN, RF OUT, PRE-FIL, BOOSTER SPLITTER, TRACK FILTER, GAIN CTRL PRE-AMP, TRACK FILTER, INTMED FILTER, MIX-OSC, IF AMP, AGC DET, PLL, IFOUT, MT

F101 12 13 14 MT

AGC TU NC1 NC2 33V 5V AS SCL SDA ADC NC

1 1V7 2 NC 6 10 0V 9 33V 7 5V3 3 5V3 4 2V6 5 2V6 8 NC

11 0V 15 4115 RES 16 4116 RES 17

IF-TER 5101 390n

+5VSW 5102 6u8 2101 100u 16V 2102 10n 5VSW_a

5103 6u8 2113 100u 16V 2103 10n 5VSW_b

SERVICE COMPAIR 1101 F102 F104 3124 100R 3125 100R

5VSW_a F103

SCL SDA I112 I113 5107 RES 5106 RES 3102 100R 3101 100R F105

6101 BZX384-C6V8 6102 BZX384-C6V8

5VSW_a I101 2104 22p 2105 22p 3103 10K

6103 * BAS316 3104 * 10K

RF_AGC F106

+VTUN 3105 1K0 F107

B6

2107 47n 2108 2u2 50V 3106 RES 2109 22u 16V

For ITV Only 1103

SCL 3126 100R SDA 3127 100R +3V3STBY

SEL_IF_SDM

F109 3111 22K I104 3112 18K

7101 BC847BW I105 0V

I110 3113 22K I109 7102 BC847BW 2114 1u0 3114 47K

FOR -/93 ONLY

5VSW_b I102 3107 6K8 3108 2K2 3110 2K2

6104 1SS356 6105 1SS356

2106 10n I103 3109 2K2

1104 * OFWK3953L 4102 * 4103 * 4104 * 4105 * 4108 * 38M9 GND NC O1 O2 I1 I2

5105 RES VIF1 F110 VIF2 F111

4107 * 4108 *

1105 * OFWK3955L 38M GND NC

B2

+5VSW 3116 100K 3117 820R I106 2111 1n0 I111 2110 1n0 I107 7103 BF820 I108 3115 I109 3118 150K 3119 560R 2112 1n0 4114 F114

FOR FM RADIO ONLY

SSIF

1106 * OFWK9656L 4109 4110 * 4111 * 4112 * ISWI O1 O2 GND NC 40M4 4113 *

5106 RES SIF1 F112 SIF2 F113

EUROPE & AP PAL-MUTLI ONLY

+3V3STBY 3120 10K 3121 10K

B7 FROM SCALER

SERVICE UART 1107

UART_TX 3122 100R F115 UART_RX 3123 100R F116 F117

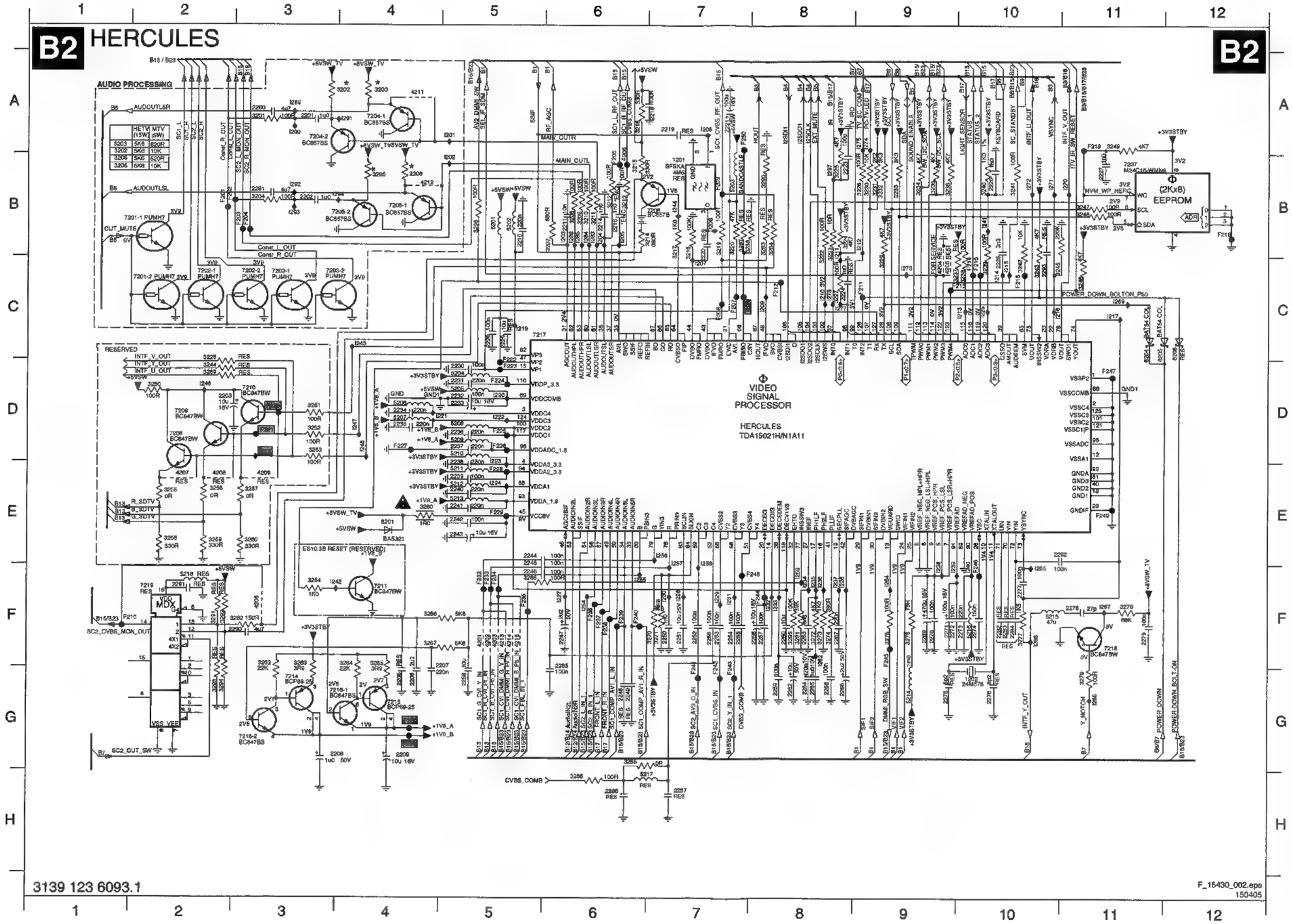
6106 BZX384-C6V8 6107 BZX384-C6V8

F_15430_001.eps 140405

3139 123 6093.1

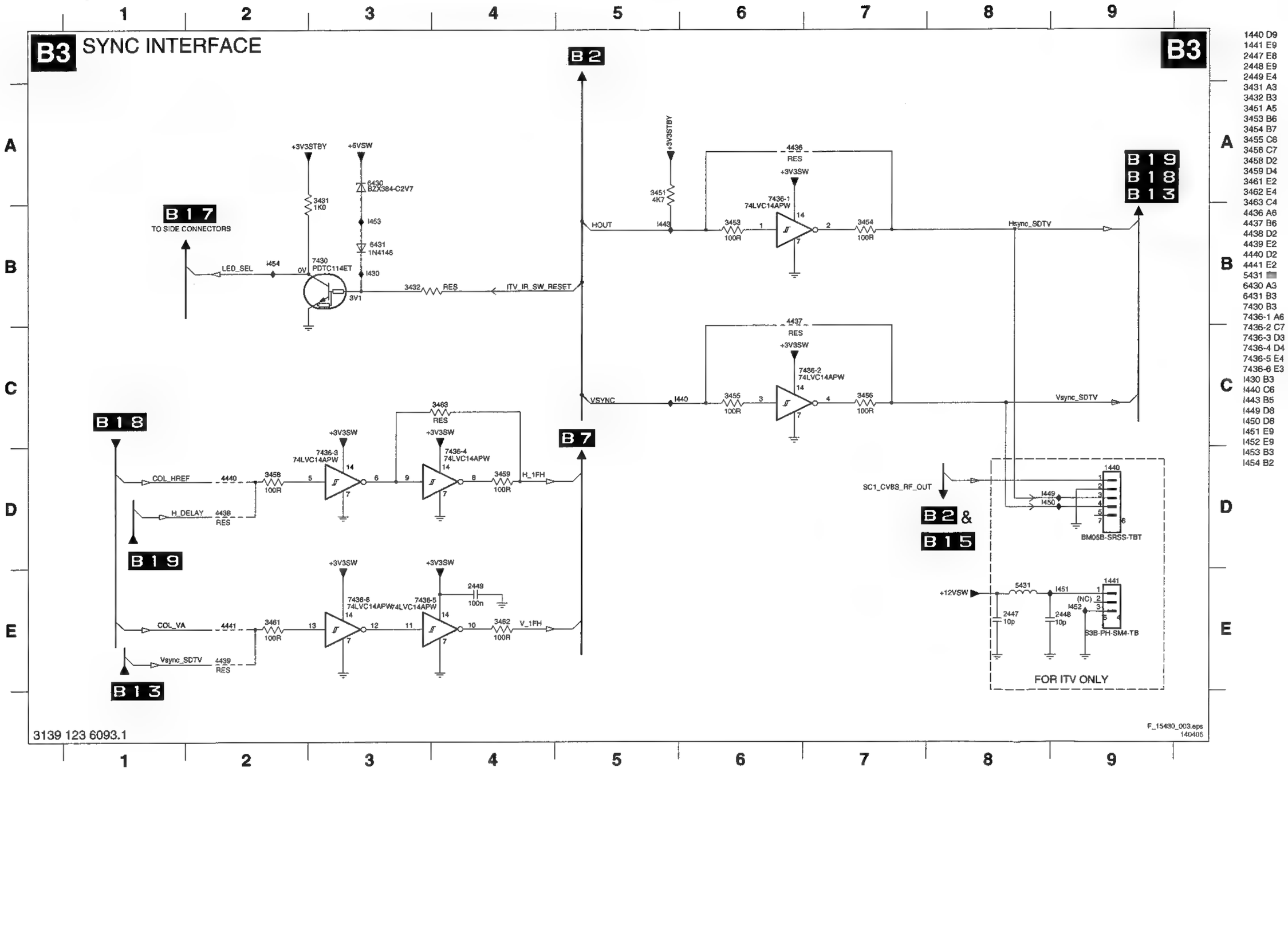
1101 C1 1102 A1 1103 1104 C9 1105 D8 1106 E9 1107 F3
2101 A6 2102 A6 2103 B6 2104 D3 2105 D3 2106 D5 2107 E2 2108 E3 2109 D4 2110 F6 2111 F7 2112 F7 2113 B6 2114 E7
3101 D2 3102 D2 3103 D3 3104 D4 3105 D2 3106 E3 3107 C6 3108 C6 3109 D6 3110 C7 3111 E5 3112 E5 3113 D7 3114 E7 3115 F5 3116 F6 3117 F7 3118 F6 3119 F6 3120 F3 3121 F3 3122 F2 3123 G2 3124 C1 3125 C1 3126 E1 3127
4102 C8 4103 C8 4104 C8 4105 C8 4106 C8 4107 D9 4108 D10 4109 E8 4110 F8 4111 F8 4112 F8 4113 F8 4114 F7 4115 B4 4116 C4
5101 B5 5102 A8 5103 B6 5105 C9 5106 E9 5107 D2 5108 D2
6101 D1 6102 D2 6103 D4 6104 C6 6105 C7 6106 G2 6107 G3
7101 D6 7102 D7 7103 F6
F101 B1 F102 C1 F103 C2 F104 C1 F105 C4 F106 F107 D3 F108 B4 F109 E5 F110 C10 F111 C10 F112 E10 F113 F10 F114 G7 F115 F3 F116 G3 F117 G3
I101 D3 I102 C6 I103 D6 I104 E5 I105 D8 I106 D7 I107 F6 I108 F7 I109 F7 I110 D7 I111 F6 I112 C1 I113 D2

SSB: Hercules



1201 B7 3215 B6 5209 D5 I216 C10
1202 G10 3216 A6 5210 D5 I217 C11
2201 A3 3217 B7 5211 E5 I218 D3
2202 B3 3218 B7 5212 E5 I219 C5
2203 D2 3219 B7 5213 E5 I220 D5
2205 G4 3220 B7 5214 G9 I221 D5
2206 G4 3222 B8 5215 F10 I222 D5
2207 F5 3223 B8 5216 F10 I223 D5
2208 G4 3224 B6 5217 H7 I224
2209 G4 3225 B8 5218 F2 I225 C10
2210 3226 B9 6201 E4 I226 F8
2211 B6 3227 C8 6204 C11 I227 F8
2214 B6 3228 D2 6205 C11 I228 F7
2216 B6 3229 C9 6208 C12 I229 F7
2218 A7 3230 B9 7201-1 B1 I230 F7
2219 A7 3231 7201-2 C2 I231 F7
2220 B7 3232 7202-1 C2 I232 F8
2221 A7 3233 B9 7202-2 C3 I233 F8
2223 B8 3234 B9 7203-1 C3 I234 F8
2224 C8 3235 B9 7203-2 C3 I235 F8
2225 B10 3236 B9 7204-1 A4 I236 F8
2226 C10 3237 C9 7204-2 A3 I237 F8
2227 B11 3238 C10 7205-1 B4 I238 F9
2228 C5 3239 C10 7205-2 B4 I239 F9
2229 C5 3240 B10 7206 B6 I240 F10
2230 D5 3241 B10 7207 B11 I241 B10
2231 D5 3242 C10 7208 D2 I242 F4
2232 D5 3243 C10 7209 D2 I243 C4
2233 D5 3244 7210 D3 I244 B7
2234 D4 3245 C10 7211 F4 I246
2235 D4 3245 C11 7214 G3 I247 D4
2236 D5 3247 B11 7215 G4 I248 D4
2237 D5 3248 B11 7216-1 G3 I254 F6
2238 3249 A11 7216-2 G3 I255 F6
2239 E5 3250 D2 7217 C6 I256 E7
2240 E5 3251 D3 7218 F11 I257 E7
2241 E5 3252 D3 7219 F2 I258 E7
2242 E5 3253 D9 F201 B2 I259 F8
2243 E5 3254 F3 F202 B2 I262 F8
2244 E5 3255 E2 F203 B3 I264 F9
2245 E5 3256 E2 F204 B3 I265 E2
2246 F5 3257 E3 F205 B6 I266 F10
2247 F6 3258 E2 F206 B6 I267 F11
2248 G6 3259 E2 F207 C7 I268 G11
2249 G6 3260 F208 C7 I269 C11
2250 F7 3262 F3 F209 B7 I270 B11
2251 F7 3263 F3 F210 F1 I271 B10
2252 F7 3264 F4 F211 C9 I272 B10
2253 F7 3265 F4 F212 C8 I273 C9
2254 F7 3266 F4 F213 C10 I274 A9
2255 F7 3267 F4 F214 C10 I275 A9
2256 F8 3268 F5 F215 C10 I277 C8
2257 F8 3270 F7 F216 C10 I278 C8
2258 G5 3271 F7 F218 A11 I283 B6
2259 G8 3272 F6 F219 B12 I284 B6
2260 F9 3273 F8 F220 D3 I285 B6
2262 G8 3274 F8 F221 D3 I288 B6
2263 F8 3275 F9 F222 D5 I289 A3
2264 G8 3276 F9 F223 D5 I290 A3
2265 G8 3277 F10 F224 I291 A4
2266 G8 3278 F11 F225 I292 B3
2267 F8 3279 G11 F226 D5 I293 B3
2268 G8 3280 E4 F227 D4 I294 B3
2269 F9 3281 F228 E5 I297 C7
2270 F9 3282 F3 F229 E5 I298 C7
2271 F9 3283 B8 F230 G4
2272 F9 3284 B8 F231 G4
2273 F10 3285 G6 F232 F5
2274 F10 3286 H6 F233 F5
2275 G9 3287 B7 F234 F5
2276 G10 3288 B7 F235 F5
2277 F10 3289 D2 F236 F6
2278 F11 3290 B8 F237 F6
2279 F11 3291 F2 F238 F6
2280 A3 3292 F2 F239 F6
2281 B3 3293 G2 F240 F6
2282 F10 3294 G2 F241 G7
2283 F10 3295 F9 F242 G7
2284 F10 3296 B6 F243 G7
2285 F8 4201 F5 F244 F8
2286 F7 4202 F6 F245 F9
2287 H7 4203 F5 F246 F10
2288 H6 4204 C9 F247 D11
2290 F3 4205 C9 F248
2291 F2 4206 F9 F249 E11
2292 E11 4207 E2 F250 A7
2293 C10 4208 E2 I201 A5
3201 A3 4209 E3 I202 B5
3202 A4 4211 A4 I203 B6
3203 A4 4212 B4 I204
3204 B3 4213 F5 I205 B6
3205 B4 4214 F5 I206 A7
3206 B4 4215 F5 I207 C7
3207 B6 5201 B5 I208 B7
3208 B6 5202 B5 I209 C8
3209 B6 5203 B7 I210 C8
3210 B6 5204 D5 I211 B8
3211 B6 5205 D5 I212 B9
3212 B6 5206 D4 I213 C10
3213 B6 5207 D4 I214 C10
3214 5208 D5 I215 C10

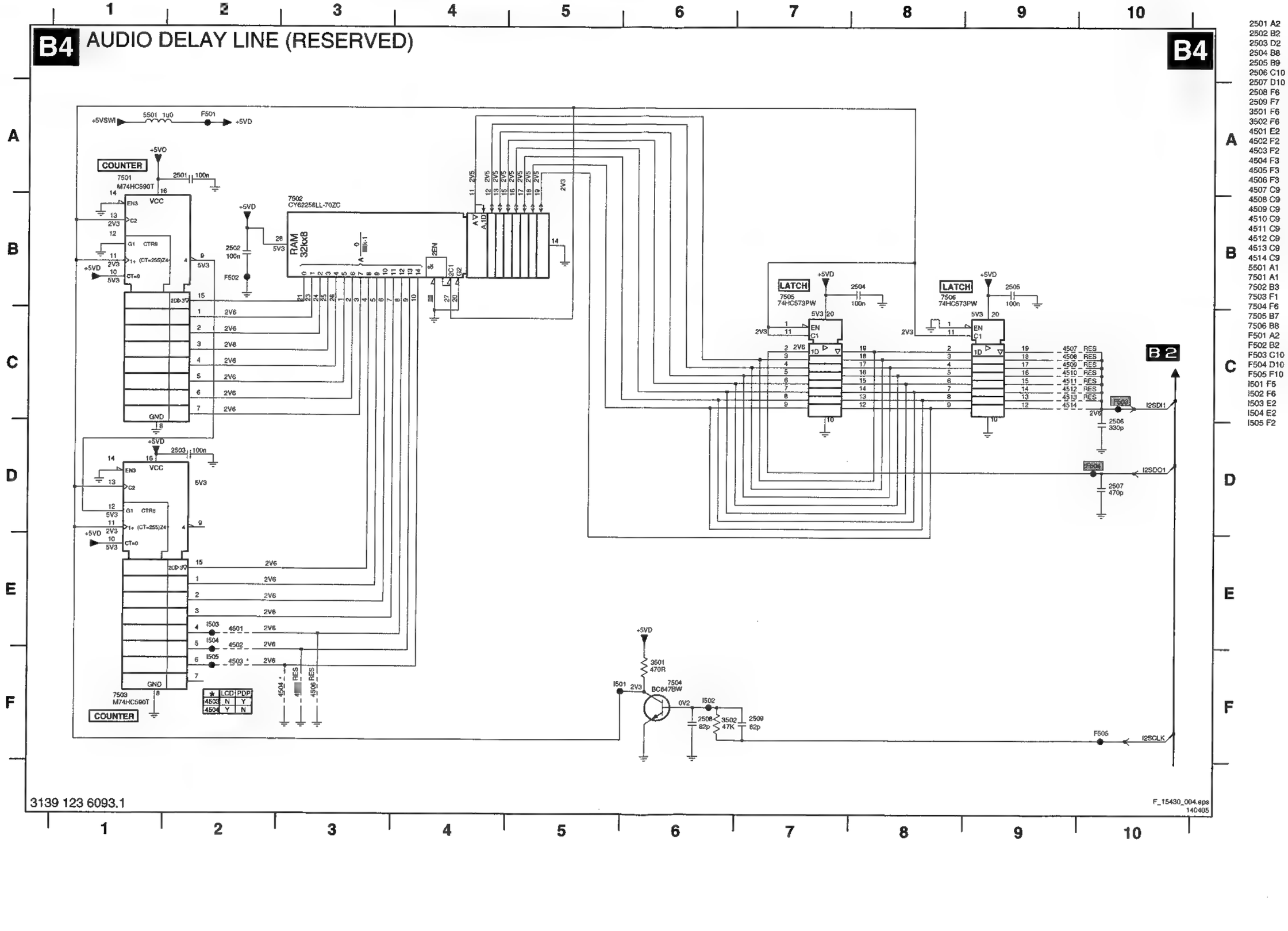
SSB: Sync Interface



1440 D9
1441 E9
2447 E8
2448 E9
2449 E4
3431 A3
3432 B3
3451 A5
3453 B6
3454 B7
3455 C6
3456 C7
3458 D2
3459 D4
3461 E2
3462 E4
3463 C4
4436 A6
4437 B6
4438 D2
4439 E2
4440 D2
4441 E2
5431
6430 A3
6431 B3
7430 B3
7436-1 A6
7436-2 C7
7436-3 D3
7436-4 D4
7436-5 E4
7436-6 E3
I430 B3
I440 C6
I443 B5
I449 D8
I450 D8
I451 E9
I452 E9
I453 B3
I454 B2

SSB: Audio Delay line (Reserved)

B4 AUDIO DELAY LINE (RESERVED)



2501 A2
2502 B2
2503 D2
2504 B8
2505 B9
2506 C10
2507 D10
2508 F6
2509 F7
3501 F6
3502 F6
4501 E2
4502 F2
4503 F2
4504 F3
4505 F3
4506 F3
4507 C9
4508 C9
4509 C9
4510 C9
4511 C9
4512 C9
4513 C9
4514 C9
5501 A1
7501 A1
7502 B3
7503 F1
7504 F6
7505 B7
7506 B8
F501 A2
F502 B2
F503 C10
F504 D10
F505 F10
I501 F5
I502 F6
I503 E2
I504 E2
I505 F2

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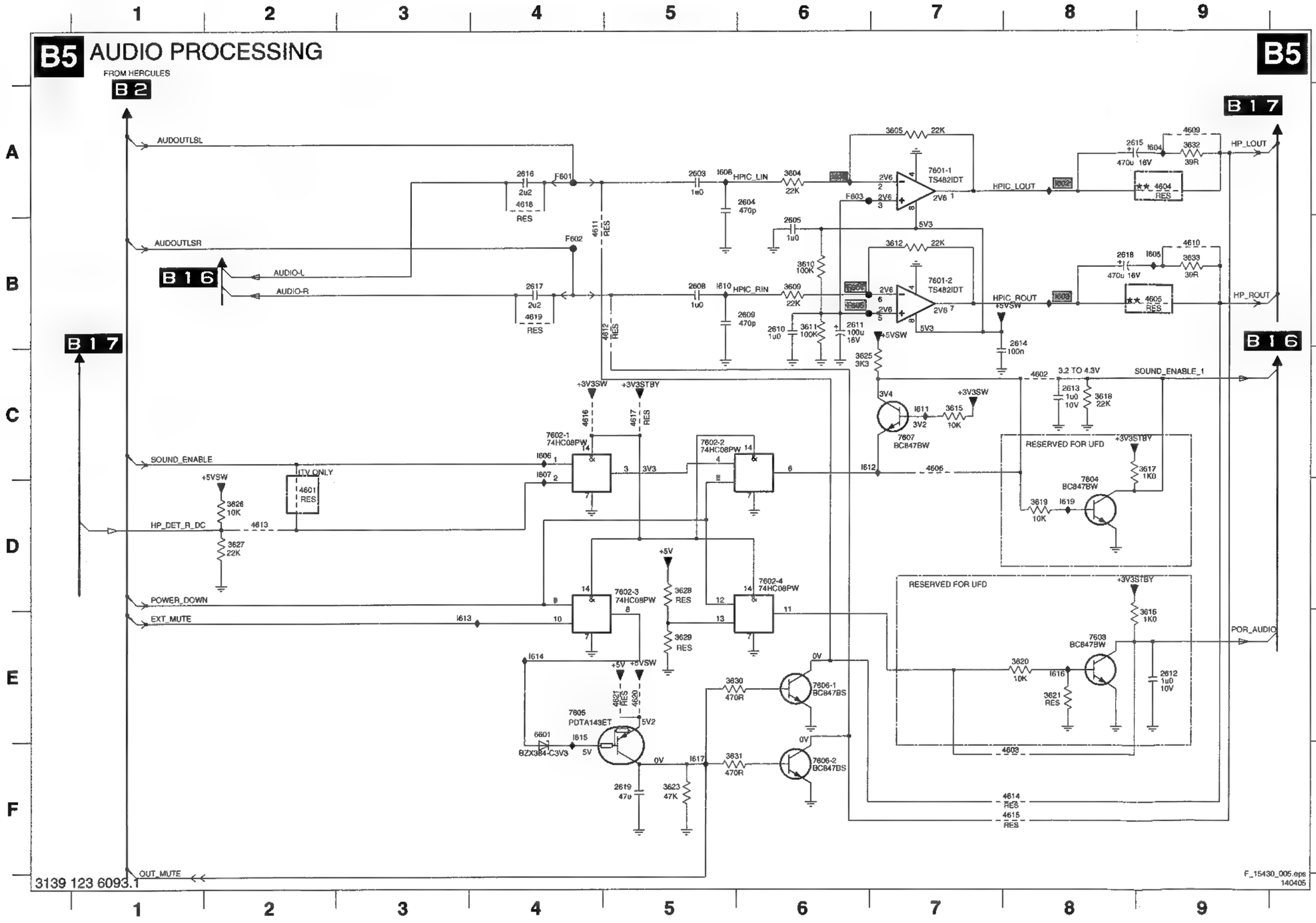
SSB: Audio Processing



2803 A5 I602 A8
2604 A6 I603
2605 B6 I604 A9
2608 B5 I605
2609 B6 I606 C4
2610 B6 I607 C4
2611 B6 I608 A5
2612 E9 I610 B5
2613 C8 I611 C7
2614 B8 I612 C6
2615 A8 I613 E3
2616 A4 I614 E4
2617 B4 I615 E4
2618 I616
2619 F5 I617 F5
3604 A6 I618 A6
3605 A7 I619 D8
3609 B6
3610 B6
3611 B6
3612 B7
3615 C7
3616 E9
3617 C9
3618 C8
3619 D8
3620 E8
3621 E8
3623 F5
3625 C6
3626 D2
3627 D2
3628 D5
3629 E5
3630 E5
3631 F5
3632 A9
3633 B9
4601 D2
4602 C8
4603 F8
4604 A9
4605 B9
4606 C7
4609 A9
4610 B9
4611 B4
4612 B4
4613 D2
4614 F8
4615 F8
4616 C4
4617 C5
4618 A4
4619 B4
4620 E5
4621 E5
6601 E4
7601-1 A7
7601-2 B7
7602-1 C4
7602-2 C5
7602-3 D5
7602-4 D6
7603 E8
7604 D8
7605 E4
7606-1 E6
7606-2 F6
7607 C7
F601 A4
F602 B4
F603 A6
F604 B6
F605 B6

SSB: DC-DC Converter

B6 DC-DC CONVERTER

B6

B 1 6
FROM TOP CONNECTORS

+12VUNREG
+12VSW
2704 10u 16V
+5V
2706 10u 16V
5704
7708 LF33CPT
IN OUT CTRL NC COM
+3V3STBY
3708 10K
6708 SS24
6709 SS14
3709 6K8
2708 RES
2709 47u 16V
5709 10u
7710 L5973D
VCC VREF OUT FB INH SYNC COMP GND PGND_HS
2710 10u
2711 10u
SUP_GND2
5712 33u
5713 10u
3712 5K6 1%
2715 22n
2714 220p
3715 4K7
3713 3K3 1%
2713 470u 16V
2716 470u 16V
FOR UFD ONLY

FOR LCD ONLY
+3V3STBY
+5VSW
+12VSW
5758 RES
5755 RES
5756 RES
I756
7754 SI2301BDS-T1-E3
11V5
3755 10K
2751 100n
I747 8V6
3758 15K
7755 PDTC114ET
PANEL-PWR-CTL
F756 0V 0V6
3760 100R
2760 1u0 25V
FOR UFD ONLY
I757
5757
5759 RES
7753 L4940D2T12
IN OUT COM
PAN_VCC
2759 RES
2752 47u 16V
6700
2700 RES
2701 100p
LVDS_VCC
11V6
B 8
FROM SCALER
B 2 1
TO EPLD

SUPPLY TO TUNER & HERCULES
+12VSW
5730 10u
I731
2730 10u 25V
2734 22n
2739 220p
3736 4K7
7730 L5970D
VCC COMP INH GND OUT FB SYNC VREF
I705
I733
32Vp
+VTUN
TO TUNER CELL
B 1
6735 BAV99
2736 22u 35V
6736 BZX384-C33
7735 BC817-25
I736
2735 470p
6733 ZXS914
3735 1K0
5733 220u
5735 1n0
B 2
TO HERCULES CELL
+12VSW
5736
7738 L78M08CDT
IN OUT COM
2738 47u 16V
2739 47u 16V
+3V3STBY
3743 22K
3749 15K
I742
7742 BC847BW
+12VUNREG
6740 BZX384-C8V2
I740
3740 1K5
I741
7741 BC847BW
3741 1K5
2741 220n
FOR UFD ONLY
3732 1K0 1%
3733 3K3 1%
I732
I738
5737 10u
5V2
+5VSW
8V
+8VSW_TV
F743 POWER_DOWN
B5
B7
B16
2731 470u 16V
2737 470u 16V

SUPPLY TO SCALER
7752 MC34063AD
DCOL
SWC
11V7
+12VSW
S Q R
IPK OSC
REFERENCE REGULATOR
SWE
TIMC
VCC
CIN_NEG
GND
I751
I752
I756
5752 10u
3751 1R0
3752 1R0
2753 470u 16V
3753 1K01%
I753
1V2
2754 RES
3754 3K3 1%
I754
2755 4n7
3734 2K2
2756 470p
5753 220u
5751 SS14
SUP_GND3
B 7
TO SCALER CELL
B 4
TO LIPSYNC
2757 470u 16V
2758 470u 16V
5754 10u
F754 +5VSW1
5V4
B 2
FROM HERCULES
3760 22K
2760 2u2
2762 22u 16V
7758 SI9433BDY-T1-E3 SI4433DY
3V2
+3V3SW
SC_STANDBY
3V1
7756 PDTC114ET
3759 1K0
I746
3761 100R
2761 1u0 25V
FOR UFD ONLY

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1751 A10 7738 F2
2700 B11 7741 G3
2701 B11 7742 G4
2704 A3 7752 D9
2706 B3 7753 B10
2708 C3 7754 A9
2709 C3 7755 B8
2710 C2 7756 G8
2711 C2 7758 F10
2713 D5 F700 B11
2714 D4 F701 A3
2715 D4 F710 B6
2716 D6 F736 E6
2730 E2 F737 F6
2731 G5 F738 F8
2733 F2 F743 G6
2734 E3 F754 E11
2735 F6 F755 C8
2736 E6 I705 E3
2737 G6 I706
2738 G2 I708 B3
2739 G3 I709 B3
2741 G3 I710 C2
2750 F9 I711 C2
2751 B9 I712 C4
2752 B10 I713 C5
2753 E8 I714 C4
2754 E8 I715 D4
2755 F9 I716 D5
2756 E10 I731 E2
2757 E11 I732 F4
2758 E11 I733 E5
2759 B9 I734 F5
2760 B9 I735 E5
2761 G9 I736 F5
2762 F9 I740 G2
3708 B2 I741 G3
3709 C3 I742 G4
3712 D5 I747 B9
3713 D5 I748 F8
3716 D6 I749 A10
3732 F4 I750 A10
3733 F4 I751 D8
3734 D11 I752
3735 F5 I753 E8
3736 F3 I754 E9
3740 G2 I755 D10
3741 G2 I756 B9
3742 G3 I757 A9
3743 G4 I758 D10
3750 F9 I759 B9
3751 D8 I760 B8
3752 D8
3753 E8
3754 E9
3755 B9
3758 B8
3759 F8
3760 B9
3761 F9
5700 B11
5704 B4
5709 C2
5712 C4
5713 C5
5730 E2
5733 F5
5735 F5
5737 F5
5738 F1
5752 D8
5753 E11
5754 E11
5755 A9
5756 A9
5757 A9
5758 A8
5759 B9
6708 C2
6709 C2
6712 D4
6733 F5
6735 E6
6736 E6
6740 G2
6751 E11
7708
7710 C3
7730 E3
7735 E5

SSB: Diversity Tables B1-B6

B1 TUNER & IF

Item	AP - non Ellins	Europe	NAFTA/LT	AP - DVB	Europe - DVB	China	Description
1102						V	TUN V+U PLL IEC BGDKM B
1102		V					TUN V+U PLL IEC BGHIL B
1102			V				TUNER UV1336/A F S H-4
1102	V						TUNER UV1316E/A I H-4
1102				V	V		TUNER UV1316SD/A CP H N-4
1104		V			V		FIL SAW SM 38MHZ9 OFWK3953L R
1104						V	FIL SAW SM 38MHZ OFWM3956L
1104			V				FIL SAW SM 45MHZ75 OFWM1967L
1104	V			V			FIL SAW SM 38MHZ8 OFWK7265L R
1105						V	FIL SAW SM 38MHZ OFWK3955L R
1106		V			V		FIL SAW SM 36MHZ9 OFWK9656L R
1106						V	FIL SAW SM 36MHZ OFWK9352L R
1108	V			V			FIL SAW SM 38MHZ9 OFWK9361L
3101	V		V			V	RST SM 0603 100R PM5 COL
3102	V		V			V	RST SM 0603 100R PM5 COL
3104		V			V		RST SM 0603 10K PM5COL
3104	V		V	V		V	RST SM 0603 JUMP. 0R05 COL
3107	V	V		V	V	V	RST SM 0603 6K8 PM5 COL
3108	V	V		V	V	V	RST SM 0603 2K2 PM5 COL
3109	V	V		V	V	V	RST SM 0603 2K2 PM5 COL
3110						V	RST SM 0603 2K2 PM5 COL
3111	V	V		V	V	V	RST SM 0603 22K PM5 COL
3112	V	V		V	V	V	RST SM 0603 18K PM5 COL
3113						V	RST SM 0603 22K PM5 COL
3114						V	RST SM 0603 47K PM5 COL
4102	V	V	V	V	V		RST SM 0603 JUMP. 0R05 COL
4103						V	RST SM 0603 JUMP. 0R05 COL
4104	V			V			RST SM 0603 JUMP. 0R05 COL
4106		V	V		V	V	RST SM 0603 JUMP. 0R05 COL
4107						V	RST SM 0603 JUMP. 0R05 COL
4108						V	RST SM 0603 JUMP. 0R05 COL
4110	V	V		V	V	V	RST SM 0603 JUMP. 0R05 COL
4111		V				V	RST SM 0603 JUMP. 0R05 COL
4113	V			V		V	RST SM 0603 JUMP. 0R05 COL
5101	V	V		V	V	V	FXDIND SM 0805 0U39 PM10 COL R
5101			V				FXDIND SM 0805 0U68 PM10 COL R
5102	V	V	V	V		V	FXDIND SM 0805 12U PM10 COL
5102					V		FXDIND SM 1008 8U8 PM5 COL
5107				V	V		FXDIND 0603 100MHZ 600R COL R
5107		V					RST SM 0603 100R PM5 COL
5108				V	V		FXDIND 0603 100MHZ 600R COL R
5108		V					RST SM 0603 100R PM5 COL
6103		V			V		DIO SIG SM BAS316 (COL) R
6105						V	DIO SIG SM 1SS356 (RHM0) R
7101	V	V		V	V	V	TRA SIG SM BC847BW (COL) R
7102						V	TRA SIG SM BC847BW (COL) R

B2 HERCULES

Item	LC4.3A AB (DVB-T)	LC4.3E AB/LC4.6E AB/LC4.9E AB (DVB-T)	LC4.3U/L	LC4.3E/LC4.8E/LC4.9E	LC4.3E W/O 3D COMB FILTER	LC4.3A - CHINA	LC4.3A - AP (non-China)	Description
2203	V	V		V	V	V	V	ELCAP SM 16V 10U PM20 COL R
2229			V					CER2 0805 X5R 6V3 10U PM10 R
2244	V	V		V	V			CER2 0402 Y5V 16V 100N COL
2245	V	V		V	V			CER2 0402 Y5V 16V 100N COL
2246	V	V		V	V			CER2 0402 Y5V 16V 100N COL
2255	V	V	V	V		V	V	CER2 0402 Y5V 16V 100N COL
2286	V	V	V	V		V	V	CER2 0402 Y5V 16V 100N COL
2289	V							CER2 0805 Y5V 10V 4U7 P8020 R
2289				V				RST SM 0603 150R PM5 COL
2290	V	V		V	V			CER2 0805 Y5V 10V 4U7 P8020 R
2291	V	V		V				CER2 0402 Y5V 16V 100N COL
2292		V						CER2 0402 Y5V 16V 100N COL
3250		V		V	V	V	V	RST SM 0402 100R PM5 COL
3251		V		V	V	V	V	RST SM 0402 100R PM5 COL
3252		V		V	V	V	V	RST SM 0402 100R PM5 COL
3253		V		V	V	V	V	RST SM 0402 100R PM5 COL
3255		V		V	V	V	V	RST SM 0402 JUMP. 0R05 COL
3256		V		V	V	V	V	RST SM 0402 JUMP. 0R05 COL
3257		V		V	V	V	V	RST SM 0402 JUMP. 0R05 COL
3258		V		V	V	V	V	RST SM 0402 1K PM5 COL
3259		V		V	V	V	V	RST SM 0402 1K PM5 COL
3260		V		V	V	V	V	RST SM 0402 1K PM5 COL
3270								RST SM 0402 10K PM5 COL
3282		V						RST SM 0603 150R PM5 COL
3285	V	V	V	V		V	V	RST SM 0402 JUMP. 0R05 COL
3286	V	V	V	V		V	V	RST SM 0402 100R PM5 COL
3291	V							RST SM 0402 47K PM5 COL
3292		V		V				RST SM 0402 12K PM5 COL
3292	V							RST SM 0402 47K PM5 COL
3293	V							RST SM 0402 47K PM5 COL
3294	V	V		V				RST SM 0402 47K PM5 COL
3295	V	V		V	V	V	V	RST SM 0402 100K PM5 COL
3296	V	V						RST SM 0402 100R PM5 COL
4206			V		V	V	V	RST SM 0805 JUMP. 0R05 COL R
4213	V	V						RST SM 0402 JUMP. 0R05 COL
4214	V	V						RST SM 0402 JUMP. 0R05 COL
4215	V	V						RST SM 0402 JUMP. 0R05 COL
5218	V	V		V				IND FXD 1206 EMI 100MHZ 120R
6206	V	V						DIO SIG SM BAT54 SOD323 COL
7208		V		V	V	V	V	TRA SIG SM BC847BW (COL) R
7209		V		V	V	V	V	TRA SIG SM BC847BW (COL) R
7210		V		V	V	V	V	TRA SIG SM BC847BW (COL) R
7217			V			V		IC SM TDA15011H/N1BD0 (PHSE) Y
7217	V	V		V	V		V	IC SM TDA15021H/N1B91 (PHSE) Y
7219	V	V		V				IC SM 74HC4053D (PHSE) R

B3 SYNC INTERFACE

Item	26/32PFxxxx - AP/NAFTA/LT	EU & AP DVB sets	LC4.3E/LC4.9x/LC4.8x/LC4.3A-China	26PF4310/10	Description
2449	V	V	V		CER2 0402 Y5V 16V 100N COL
3432		V			RST SM 0402 2K7 PM5 COL
3458	V	V	V		RST SM 0402 100R PM5 COL
3459	V	V	V		RST SM 0402 100R PM5 COL
3461	V	V	V		RST SM 0402 100R PM5 COL
3462	V	V	V		RST SM 0402 100R PM5 COL
4436				V	RST SM 0402 JUMP. 0R05 COL
4437				V	RST SM 0402 JUMP. 0R05 COL
4440	V	V	V		RST SM 0402 JUMP. 0R05 COL
4441	V	V	V		RST SM 0402 JUMP. 0R05 COL
6430	V		V	V	DIO REG SM PDZ2.4B (PHSE) R
6431	V		V	V	DIO SIG SM 1N4148WS (VISH) R
7436	V	V	V		IC SM 74LVC14APW (PHSE) R

B5 AUDIO WITHOUT AMPLIFIER

Item	26/32PF	37/42/50PF	Description
2612		V	CER2 0603 Y5V 10V 1U COL
2613	V		CER2 0603 Y5V 10V 1U COL
2616	V		CER2 0603 X5R 6V3 2U2 PM10 R
2617	V		CER2 0603 X5R 6V3 2U2 PM10 R
3615	V		RST SM 0402 10K PM5 COL
3616		V	RST SM 0402 1K PM5 COL
3617		V	RST SM 0402 1K PM5 COL
3618	V		RST SM 0402 22K PM5 COL
3619		V	RST SM 0402 10K PM5 COL
3620		V	RST SM 0402 10K PM5 COL
3623	V		RST SM 0402 47K PM5 COL
3625	V		RST SM 0402 3K3 PM5 COL
3627	V		RST SM 0402 22K PM5 COL
3628		V	RST SM 0402 10K PM5 COL
3628		V	RST SM 0402 22K PM5 COL
3630	V		RST SM 0402 330R PM5 COL
3630		V	RST SM 0402 470R PM5 COL
3631	V		RST SM 0402 330R PM5 COL
3631		V	RST SM 0402 470R PM5 COL
3632		V	RST SM 0402 RC31 39R PM5 R
3633		V	RST SM 0402 RC31 39R PM5 R
4601		V	RST SM 0603 JUMP. 0R05 COL
4602	V		RST SM 0603 JUMP. 0R05 COL
4603	V		RST SM 0603 JUMP. 0R05 COL
4606		V	RST SM 0603 JUMP. 0R05 COL
4609	V		RST SM 0603 JUMP. 0R05 COL
4610	V		RST SM 0603 JUMP. 0R05 COL
4611	V		RST SM 0603 JUMP. 0R05 COL
4612	V		RST SM 0603 JUMP. 0R05 COL
4613	V		RST SM 0603 JUMP. 0R05 COL
4614		V	RST SM 0603 JUMP. 0R05 COL
4615		V	RST SM 0603 JUMP. 0R05 COL
4616	V		RST SM 0603 JUMP. 0R05 COL
4617		V	RST SM 0603 JUMP. 0R05 COL
4618		V	RST SM 0603 JUMP. 0R05 COL
4619		V	RST SM 0603 JUMP. 0R05 COL
4620	V		RST SM 0603 JUMP. 0R05 COL
4621		V	RST SM 0603 JUMP. 0R05 COL
7603		V	TRA SIG SM BC847BW (COL) R
7604		V	TRA SIG SM BC847BW (COL) R
7607	V		TRA SIG SM BC847BW (COL) R

B6 DC DC CONVERTER

Item	26/32PF LCD	37/42PF LCD	42/50PF PDP	DVB PDP 42PF	DVB LCD 37PF	Description
2701	V	V			V	CER1 0402 NP0 50V 100P COL
2706		V	V	V	V	ELCAP SM 16V 10U PM20 COL R
2709		V	V	V	V	ELCAP SM 16V 47U PM20 COL R
2710		V	V	V	V	CER2 1210 Y5V 25V 10U P8020 R
2711		V	V	V	V	CER2 1210 Y5V 25V 10U P8020 R
2713		V	V	V	V	ELCAP SM SEV 16V 470U PM20 R
2714		V	V	V	V	CER2 0402 X7R 50V 220P COL
2715		V	V	V	V	CER2 0402 X7R 16V 22N PM10 R
2741		V	V	V	V	CER2 0603 X7R 10V 220N COL
2751	V	V			V	CER2 0402 Y5V 16V 100N COL
2752	V	V			V	ELCAP SM 16V 47U PM20 COL R
2760	V	V			V	CER2 1206 X7R 25V 1U PM10 R
2761		V	V	V	V	CER2 1206 X7R 25V 1U PM10 R
3708		V	V	V	V	RST SM 0402 10K PM5 COL
3709		V	V	V	V	RST SM 0402 6K8 PM5 COL
3712		V	V	V	V	RST SM 0603 RC22H 5K6 PM1 R
3713		V	V	V	V	RST SM 0603 RC22H 3K3 PM1 R
3716		V	V	V	V	RST SM 0402 4K7 PM5 COL
3740		V	V	V	V	RST SM 0402 1K5 PM5 COL
3741		V	V	V	V	RST SM 0402 1K5 PM5 COL
3742		V	V	V	V	RST SM 0402 15K PM5 COL
3743		V	V	V	V	RST SM 0402 22K PM5 COL
3755	V	V			V	RST SM 0402 10K PM5 COL
3758	V	V			V	RST SM 0402 15K PM5 COL
3760	V	V			V	RST SM 0402 100R PM5 COL
3761		V	V	V	V	RST SM 0402 100R PM5 COL
5700	V	V			V	IND FXD 1206 EMI 100MHZ 120R R
5704		V	V	V	V	IND FXD SM 1206 10U PM20 R
5709		V	V	V	V	IND FXD SM 7032 10U PM20 R
5712		V	V	V	V	IND FXD SM 12565 33U PM20 R
5713		V	V	V	V	INDFXD SM 10145 10U PM20 R
5756	V	V			V	IND FXD 1206 EMI 100MHZ 120R R
5757	V	V			V	IND FXD 1206 EMI 100MHZ 120R R
6708		V	V	V	V	DIO REC SS24 COL R
6709		V	V	V	V	DIO REC SS14 COL R
6712		V	V	V	V	DIO REC SS36 COL
6740		V	V	V	V	DIO REG SM PDZ8.2B (PHSE)
7708		V	V	V	V	IC SM LF33CPT (ST00) R
7710		V	V	V	V	IC SM E-L5973D (ST00) R
7741		V	V	V	V	TRA SIG SM BC847BW (COL) R
7742		V	V	V	V	TRA SIG SM BC847BW (COL) R
7754	V	V			V	FET POW SM SI2301BDS-E3(VISH)R
7755	V	V			V	TRA SIG SM PDTC114ET (COL) R

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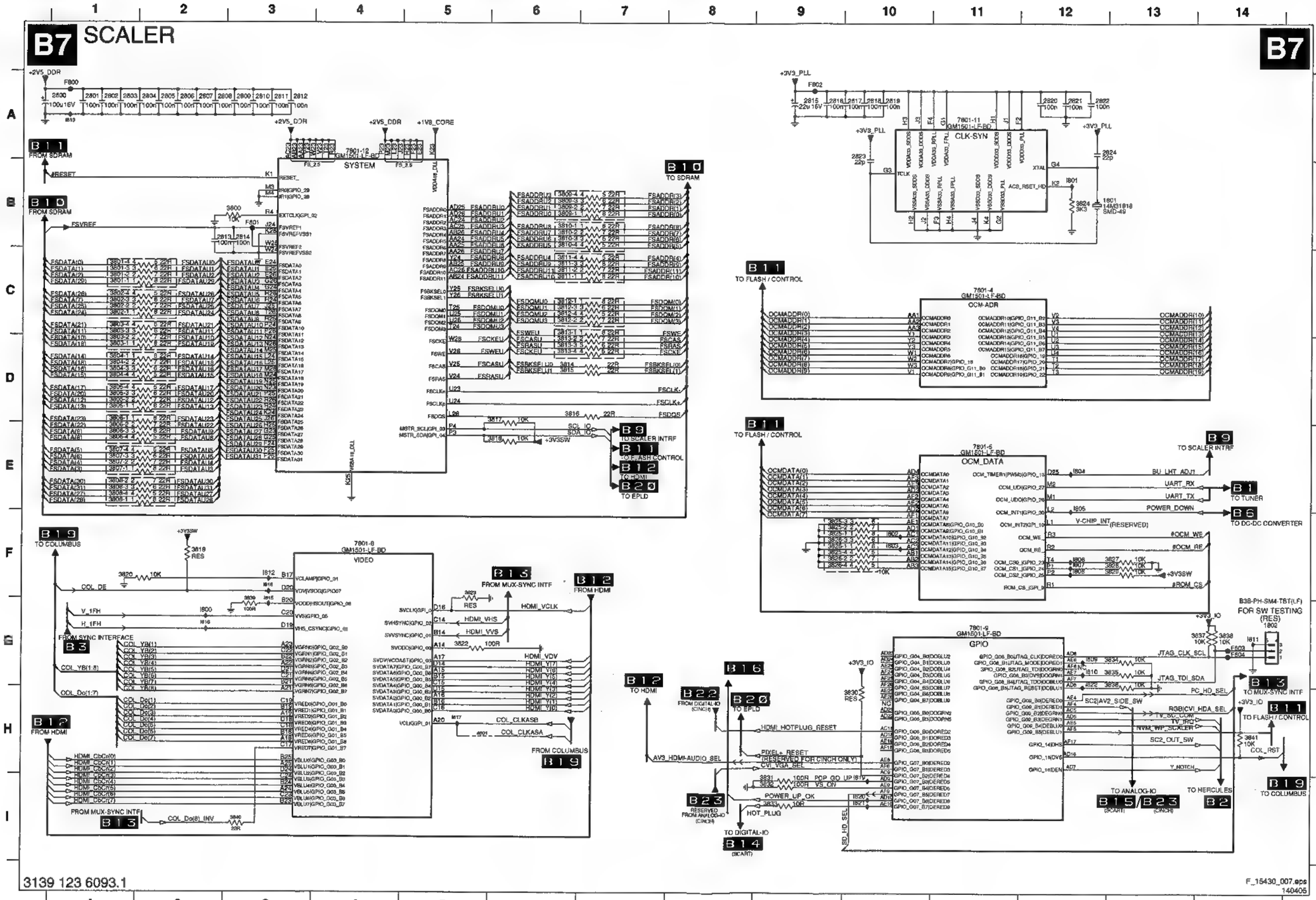
230505

SSB: Scaler

B7 SCALER



1801 B12 7801-12 A4
1802 G14 7801-4 C11
2800 A1 7801-5 E11
2801 A1 7801-6 F4
2802 A1 7801-9 G11
2803 A1 F800 A1
2804 A2 F801
2805 A2 F802 A9
2806 A2 F803 G14
2807 A2 F804 G14
2808 A2 I800 G2
2809 A3 I801 B12
2810 A3 I802 F10
2811 A3 I803 F10
2812 A3 I804 E12
2813 B2 I805 E12
2814 B3 I806 F12
2815 A9 I807 F12
2816 A9 I808 F12
2817 A10 I809 G12
2818 A10 I810 G12
2819 A10 I811 G14
2820 A12 I812 F3
2821 A12 I813 A1
2822 A12 I815 G3
2823 A10 I816 G2
2824 A12 I817 H5
3800 B3 I818 F3
3801-1 C1 I819 I10
3801-2 C1 I820 I10
3801-3 C1 I821 I10
3801-4 C1 I822 G12
3802-1 C1
3802-2 C1
3802-3 C1
3802-4 C1
3803-1 D1
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3803-4 C1
3804-1 D1
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3805-1 D1
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3805-3 D1
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3807-4 E1
3808-1 E1
3808-2 E1
3808-3 E1
3808-4 E1
3809-1 B6
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3809-3 B6
3809-4 B6
3810-1 B6
3810-2 B6
3810-3 B6
3810-4 B6
3811-1 C8
3811-2 C6
3811-3 C6
3811-4 C8
3812-1 C8
3812-2 C6
3812-3 C6
3812-4 C8
3813-1 C6
3813-2 D6
3813-3 D6
3813-4 D6
3814 D6
3815 D6
3816 D6
3817 D6
3818 E6
3819 F2
3820 F1
3822 G5
3823 F5
3824 B12
3825-1 F9
3825-2 F9
3825-3 F9
3825-4 F9
3826-1 F9
3826-2 F9
3826-3 F9
3826-4 F9
3827 F12
3828 F13
3829 F13
3830 H10
3831 I9
3832 I8
3833 I8
3834 G13
3835 G13
3836 G13
3837 G14
3838 G14
3839 G3
3840 I9
3841 H14
4501 H5
7801-11 A11

SSB: Scaler Supply

B8 SCALER

B8

SUPPLY FOR SCALER

+3V3SW
5900 → +3V3_PLL
5901 → +3V3_ADC
5902 → +3V3_DVI
5903 → +3V3_IO
5904 F900 → +3V3_LBADC
5905 → +3V3_LVDSA
5906 → +3V3_LVDSB
5907 → +3V3_LVDS

+3V3SW — 7900 LF25CDT — F906 — 5908 → +2V5_DDR
2900 100n; 2901 1n0; 2902 470u 16V

+3V3SW — 7901 LD1086D2T18 — F901 — +1V8
2903 100n; 2904 47u 16V
5909 → +1V8_ADC
5910 → +1V8_DVI
5911 → +1V8_CORE

+3V3_IO — F901 — 2905 100u 16V; 2906–2916 100n
+1V8_CORE — F902 — 2917 100u 16V; 2918–2929 100n

7801-13 GM1501-LF-BD SUPPLY
IO_3.3 (AC10, AC8, AC5, AC4, AB4, AA4, Y4, W4, D22, M22, D17)
CORE_1.8 (U17, U15, U10, T17, T16, L11, L15, K17, K16, K11, K10)
D_GND (A13, B13, K12, K13, K14, K15, L10, L12, L13, L14, L15, L17, M10, M11, M12, M13, M14, M15, N11, N12, N13, N14, N15, N16, N17, P10, P11, P12, P13, P14, P15, P16, P17, R10, R11, R12, R13, R14, R15, R16, R17, T10, T12, T13, T14, T15, U12, U13, U14, U15, AD15)
I905

7801-14 GM1501-LF-BD NC
NC A1; NC C5; NC D5; AC17 NC; NC NC; K3 NC; F1 NC

+3V3_LBADC — 2940 47u 16V; 2941 100n
7801-3 GM1501-LF-BD ADC
KEYBOARD 4900 RES
C12 LBADC_IN1; (RES) B12 LBADC_IN2; (RES) A12 LBADC_IN3; D12 LBADC_RETURN; LBADC_GND
2942 100n

F903 — 2930–2933 100n — +1V8_DVI — D6, D8, D9, D10 — DVI_1.8
F904 — 2934 47u 16V; 2935–2938 100n — +3V3_DVI — C11, C9, C8, C6 — DVI_3.3

B14 TO DIGITAL-IO (SCART ONLY)
7801-2 GM1501-LF-BD DVI
SCL_DVI N4 — DVI_SCL|GPI_07
SDA_DVI N3 — DVI_SDA|GPI_08
RXC+IN A8, RXC-IN B8 — RXCp, RXCn
RX0+IN A8, RX0-IN B8 — RX0p, RX0n
RX1+IN A9, RX1-IN B9 — RX1p, RX1n
RX2+IN A10, RX2-IN B10 — RX2p, RX2n
B11 REXT
DVI_GND (A7, A11, B5, B7, C7, D7, D11)
I908

7801-10 GM1501-LF-BD DISPLAY PWR
LVDSA_GND_1 AD19; LVDSA_GND_2 AC19; LVDSA_GND_3 AC20
LVDSB_GND_1 AC13; LVDSB_GND_2 AC14; LVDSB_GND_3 AC15
VSSD33_LVDS AD17
VDDD33_LVDS AE17 — F905 — +3V3_LVDS
LVDSA_3.3_3 AC22; LVDSA_3.3_2 AC21; LVDSA_3.3_1 AD20 — F906 — +3V3_LVDSA — 2945 22u 16V; 2946–2948 100n; 2949 100n
LVDSB_3.3_3 AC12; LVDSB_3.3_2 AD13; LVDSB_3.3_1 AD12 — F907 — +3V3_LVDSB — 2950 22u 16V; 2951, 2952 100n

B13 TO MUX-SYNC INTERFACE
B18 ADC
B19 & B2 TO COLUMBUS / HERCULES
+3V3STBY — 3901 RES; 3902 RES — 2953, 2954 100n
F908 — +1V8_ADC
+3V3_ADC — F909 — 2955 22u 16V; 2956–2959 100n

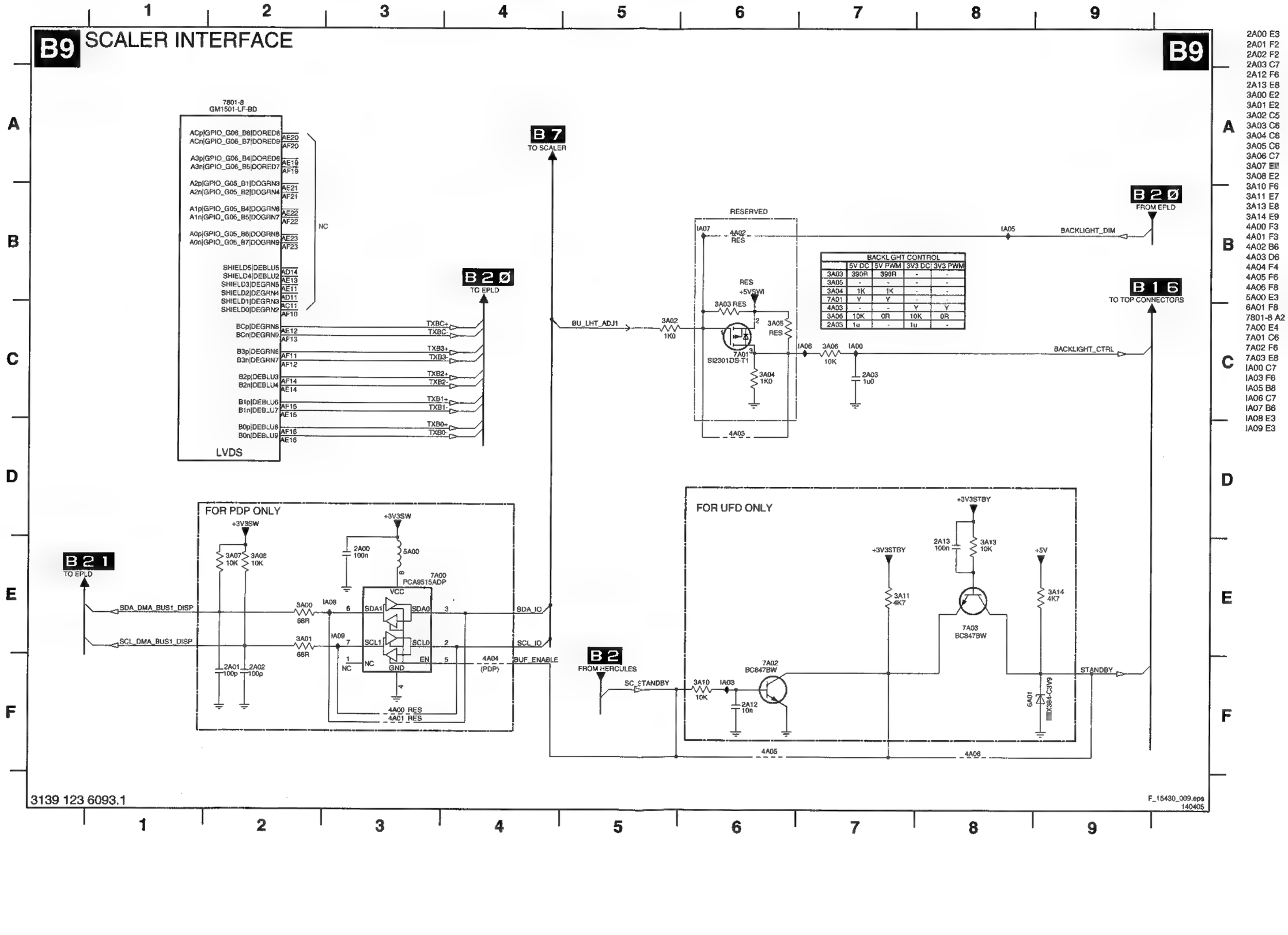
7801-1 GM1501-LF-BD ANA-IN
ADC_1.8 (A4, A3); ADC_3.3 (B3, E3, D3, A2)
AVSYNC L3
AHSYNC L4
SCL, SDA — 3903, 3904 100R — VGA_SCL|GPI_05 N2, VGA_SDA|GPI_06 N1
SOG C3
R_PR+ D2, R_PR- D1 — REDp, REDn
G_Y+ C2, G_Y- C1 — GREENp, GREENn
B_PB+ B2, B_PB- B1 — BLUEp, BLUEn
ADC_AGND (C4, D4, E1, E2, E4); ADC_DGND (A5, B4)
F910

B16 TO TOP CONN.
B16 FROM DC-DC CONVERTER B6
7801-7 GM1501-LF-BD CTRL
3900 3K3 I904 — AC16 OEXTR
FAN_SPEED C26 — PWM0|GPIO_10
HD_FILTER C25 — PWM1|GPIO_11
PPWR|GPIO_08 A26 — PANEL-PWR-CTL
PB|AS|GPIO_09 B25 — LAMP_ON_OFF
DCLK|GPIO_17 AC7 — NC
PWM2|GPIO_12 D26 — I903 — BU_LHT_ADJ2 (RES)

3139 123 6093.1
F_15430_008.eps 150405

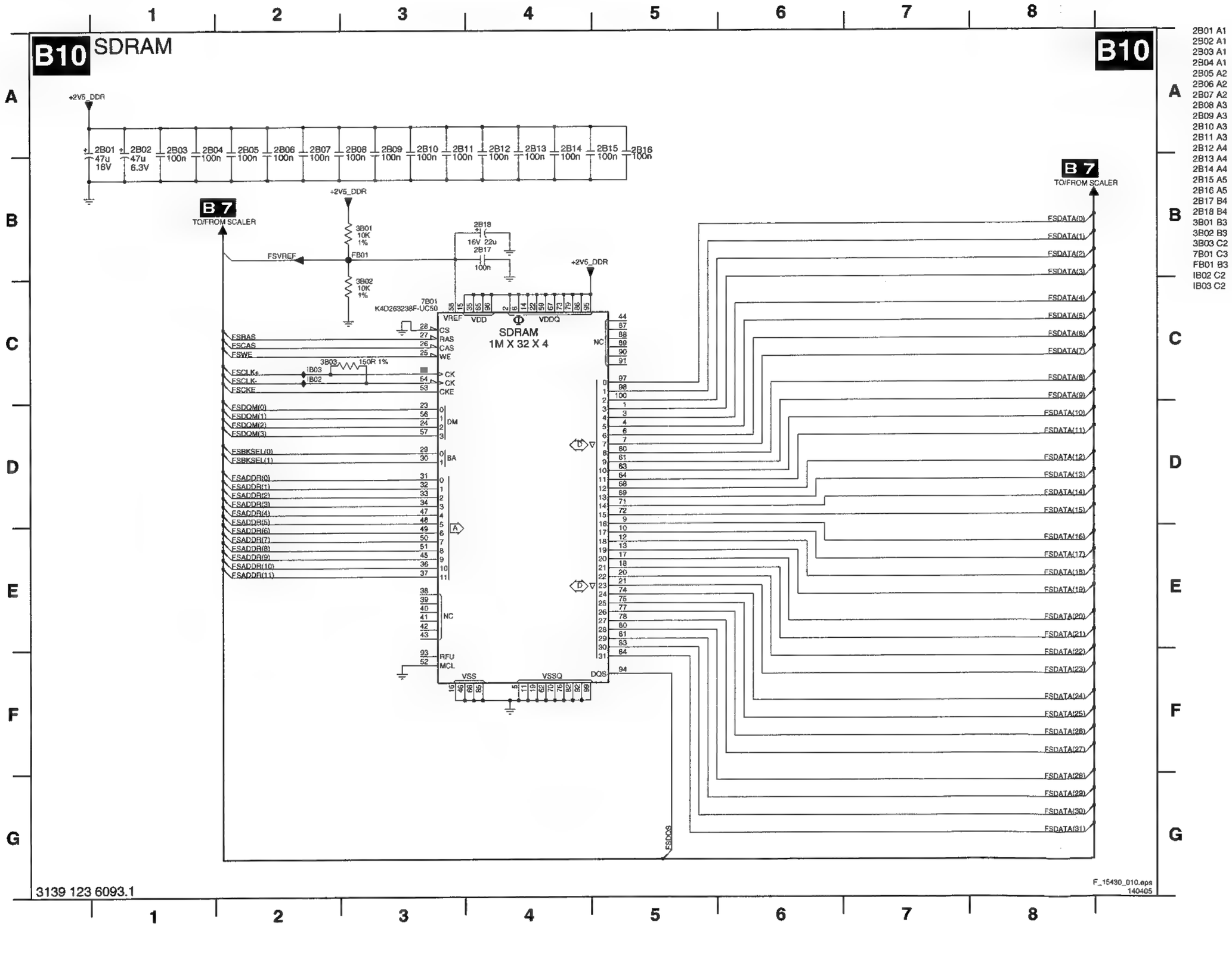
2900 D1 F906 D10
2901 D2 F907 D10
2902 D2 F908
2903 E1 F909 E10
2904 E2 F910 G9
2905 A4 I900 C2
2906 A4 I901 E1
2907 A4 I902 E2
2908 A4 I903 G8
2909 A4 I904 F4
2910 A5 I905 C4
2911 A5 I906 E6
2912 A5
2913 A5
2914 A6
2915 A6
2916 A6
2917 A7
2918 A7
2919 A7
2920 A7
2921 A7
2922 A8
2923 A8
2924 A8
2925 A8
2926 A9
2927 A9
2928 A9
2929 A9
2930 C5
2931 C5
2932 C5
2933 C5
2934 C7
2935 C7
2936 C7
2937 C8
2938 C8
2939 C8
2940 B9
2941 B10
2942 C9
2945 D10
2946 D11
2947 D11
2948 D11
2949 D11
2950 D10
2951 D11
2952 D11
2953 E8
2954 E8
2955 E10
2956 E10
2957 E10
2958 E11
2959 E11
3900 F4
3901 E8
3902 E8
3903 F8
3904 F8
4900 B9
5900 A1
5901 B1
5902 B1
5903
5904 B1
5905 C1
5906 C1
5907 C1
5908 C2
5909 D2
5910 E2
5911 E2
7801-1 F9
7801-10 C9
7801-13 B8
7801-14 A10
7801-2 C6
7801-3 B10
7801-7 F5
7900 C1
7901 D1
F900 B2
F901 A4
F902 A7
F903 C6
F904 C7
F905 D10

SSB: Scaler Interface



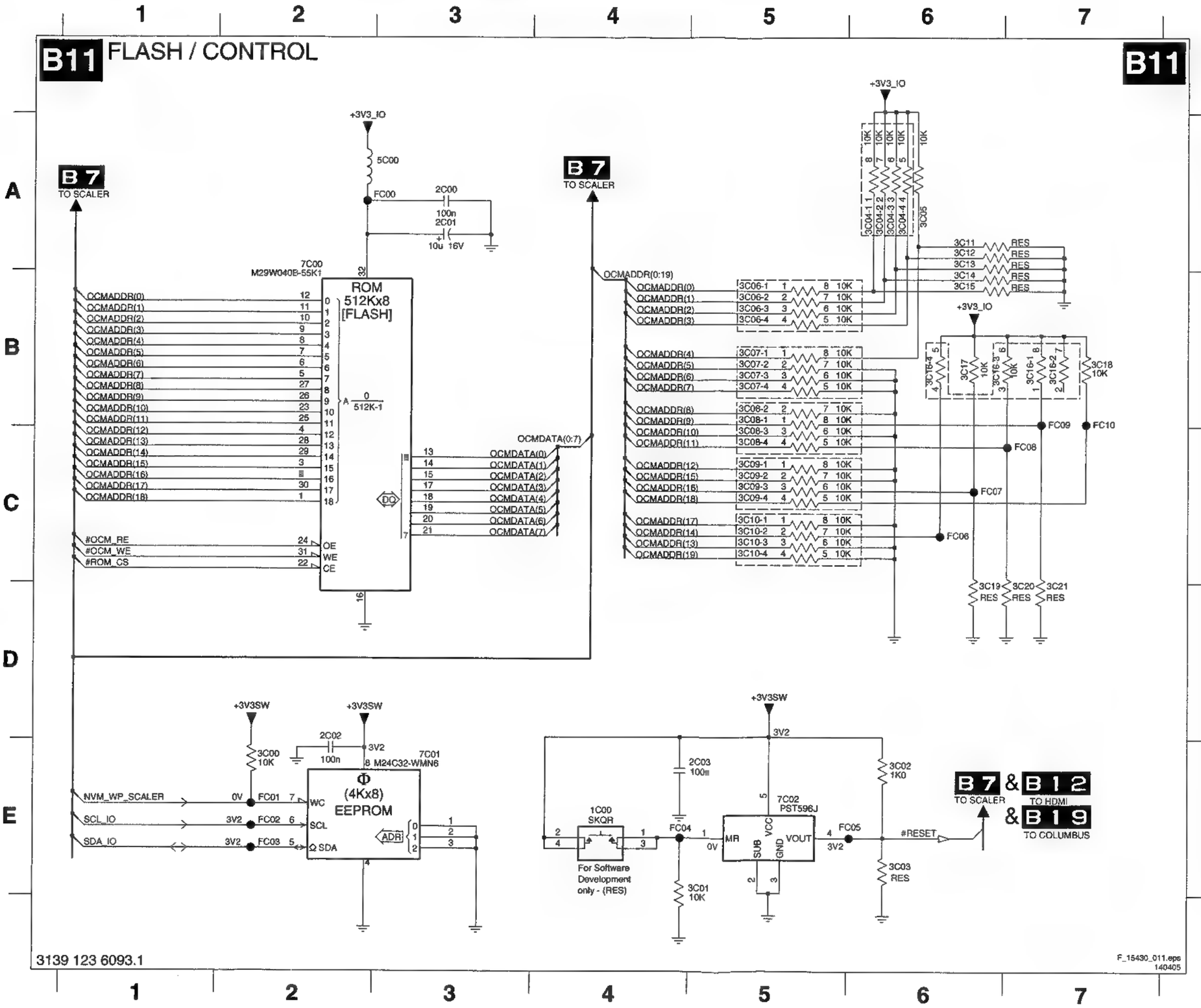
2A00 E3
2A01 F2
2A02 F2
2A03 C7
2A12 F6
2A13 E8
3A00 E2
3A01 E2
3A02 C5
3A03 C6
3A04 C6
3A05 C6
3A06 C7
3A07 E1
3A08 E2
3A10 F6
3A11 E7
3A13 E8
3A14 E9
4A00 F3
4A01 F3
4A02 B6
4A03 D6
4A04 F4
4A05 F6
4A06 F8
5A00 E3
6A01 F8
7801-8 A2
7A00 E4
7A01 C6
7A02 F6
7A03 E8
IA00 C7
IA03 F6
IA05 B8
IA06 C7
IA07 B6
IA08 E3
IA09 E3

SSB: SDRAM



3139 123 6093.1

SSB: Flash / Control



1C00 E4
2C00 A3
2C01 A3
2C02 E2
2C03 E5
3C00 E2
3C01 E5
3C02 E6
3C03 E6
3C04-1 A6
3C04-2 A6
3C04-3 A6
3C04-4 A6
3C05 A6
3C06-1 B5
3C06-2 B5
3C06-3 B5
3C06-4 B5
3C07-1 B5
3C07-2 B5
3C07-3 B5
3C07-4 B5
3C08-1 B5
3C08-2 B5
3C08-3 C5
3C08-4 C5
3C09-1 C5
3C09-2 C5
3C09-3 C5
3C09-4 C5
3C10-1 C5
3C10-2 C5
3C10-3 C5
3C10-4 C5
3C11 A6
3C12 A6
3C13 A6
3C14 B6
3C15 B6
3C16-1 B7
3C16-2 B7
3C16-3 B6
3C16-4 B6
3C17 B6
3C18 B7
3C19 C6
3C20 C7
3C21 C7
5C00 A3
7C00 A2
7C01 E3
7C02 E5
FC00 A3
FC01 E2
FC02 E2
FC03 E2
FC04 E4
FC05 E6
FC06 C6
FC07 C6
FC08 C7
FC09 B7
FC10 B7

SSB: HDMI (N.A.)

2D00 A3 2D01 C2 2D02 C3 2D03 F4 2D04 F4 2D05 F4 2D06 F4 2D07 A5 2D08 B5 2D09 B5 2D10 B5 2D11 B5 2D12 A5 2D13 B5 2D14 B6 2D15 B6 2D16 B5 2D17 A6 2D18 B6 2D19 B6 2D20 A7 2D21 B6 2D22 B6 2D23 A7 2D24 B7 2D25 B7 2D26 B7 2D27 A8 2D28 B6 2D29 B8 2D30 B8 2D31 B8 2D32 E11 2D33 E11 2D34 E12 2D35 E12 2D36 G11 2D37 H11 2D38 G12 2D39 G12 2D40 G12 2D41 H13 2D44 F14 2D45 G14 3D00 A2 3D01 A3 3D02 A3 3D03 C2 3D04 C2 3D05 C4 3D06 C4 3D07 D4 3D08 D4 3D09 C5 3D10 C5 3D11 F4 3D12 F4 3D15-1 B11 3D15-2 B11 3D15-3 C11 3D15-4 C11 3D16-1 C11 3D16-2 C11 3D16-3 C11 3D16-4 C11 3D17-1 C11 3D17-2 D11 3D17-3 D11 3D17-4 D11 3D18-1 D11 3D18-2 D11 3D18-3 D11 3D18-4 D11 3D19 E12 3D20 E12 3D21-1 G9 3D21-2 G9 3D21-3 F9 3D21-4 F9 3D22 G9 3D23 G9 3D24 G11 3D25 H11 3D26 G12 3D27 H13 3D30 F14 3D31 F14 3D32 G14 3D33 G14 3D34 H11 3D35 H12 4D00 F13 4D01 F13 5D00 A5 5D01 A6 5D02 A6 5D03 A7 5D04 A7 7D00 A2 7D01 D3 7D02 D4 7D03 C6 7D04 E11 7D05 F13 FD00 B3 FD01 C2 FD02 C2 FD03 C2 FD04 D2 FD05 G2 FD06 G2 FD07 A5 FD08 A6 FD09 A6 FD10 A6 FD11 A7 FD12 F9 FD13 E11 FD14 E12 FD15 F10 FD16 E13 FD17 H7 ID00 C3 ID01 D3 ID02 D4 ID03 D4 ID04 F5 ID05 F5 ID06 F5 ID07 G5 ID08 G10 ID09 G11 ID10 G12 ID11 G12 ID12 H12 ID13 H12 ID14 H12 ID15 F13 ID16 E13 ID17 E13 ID18 F14 ID19 G14 ID20 F14 ID21 G14 ID22 F4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

B12 HDMI (NOT APPLICABLE IN EUROPE SET)

B12

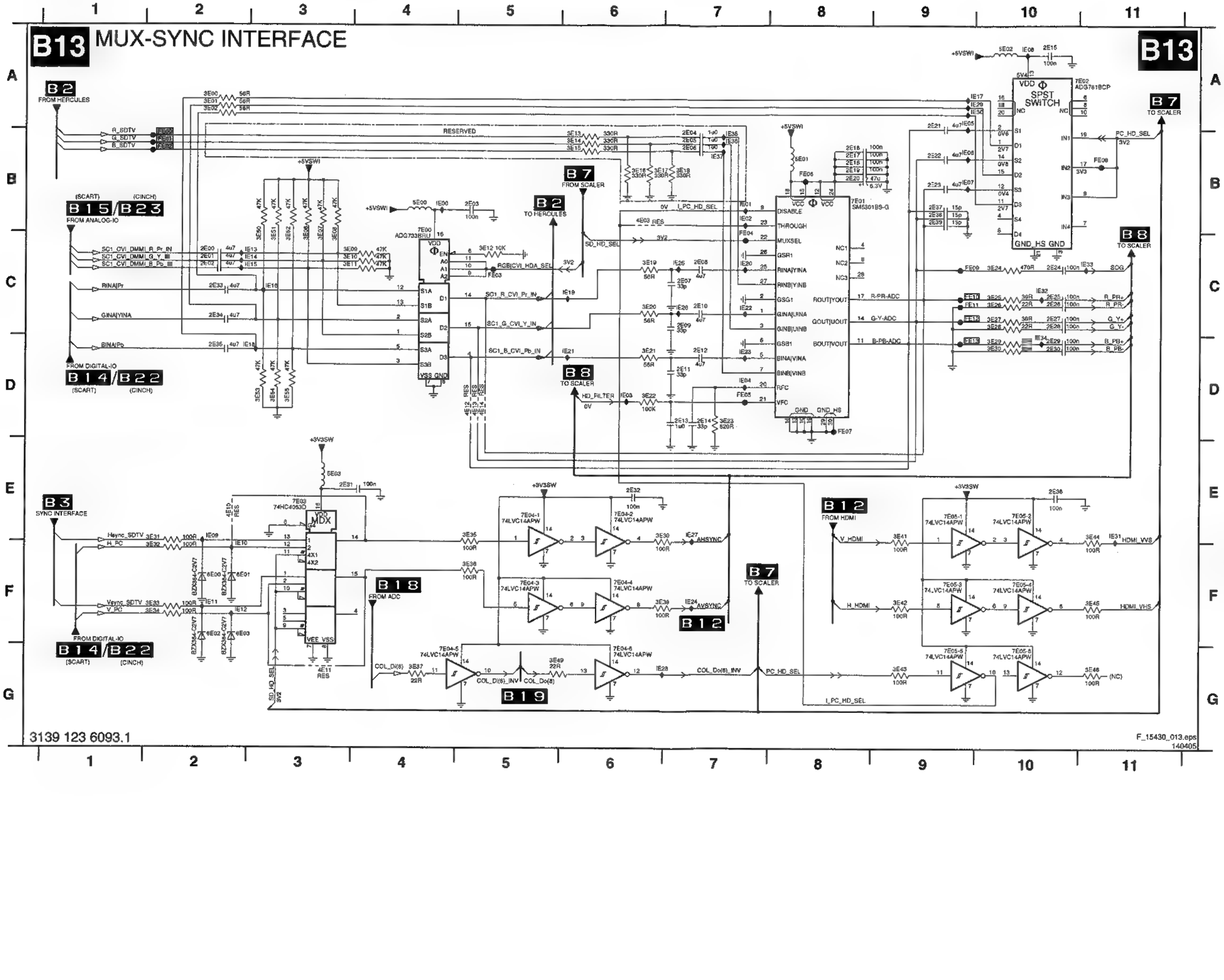
A B C D E F G H

B 7 FROM SCALER
SCL_IO
SDA_IO
7D00 M24C02-WMN5 (256x8) EEPROM
3D00 4K7 3D01 4K7 5D02 4K7 2D00 100n FD00
+3V3SW
5D00 5D01 5D02 5D03 5D04
FD07 FD08 FD09 FD10 FD11
2D07 22u 6.3V 2D12 22u 6.3V 2D23 22u 6.3V 2D27 22u 6.3V
2D08 100n 2D13 100n 2D17 10u 2D20 10u 2D24 100n 2D28 100n
2D09 1n0 2D14 1n0 2D18 100n 2D21 100n 2D25 1n0 2D29 1n0
2D10 1n0 2D15 1n0 2D19 1n0 2D22 1n0 2D26 1n0 2D30 1n0
2D11 1n0 2D16 1n0 2D31 1n0
PLLIN
COMP
3D10 390R
B 22 FROM DIGITAL-IO (CINCH ONLY)
DOC_SDA FD01 3D03 0R
DOC_SCL FD02 3D04 0R ID00
+5VHDMI FD03
2D01 10n FD04 2D02 1n0 ID01
B 11 FROM FLASH/CONTROL
/RESET
7D03 SII9993CTG100
RESET MCLKIN MCLKOUT CBCL CSDA DSCL DSDA RXC- RXC+ RX0- RX0+ RX1- RX1+ RX2- RX2+ RSET COMP PLLIN PLLOUT EXT-RES HSYNC VSYNC
AVCC VCC PVCC1 PVCC2 DVCVCC DVCVCCD1 DVCVCCD2 DVCVCC1
HDMI PANELLINK RECEIVER
NC RSVDL RSVDD ANRPR ANGY ANBPR SPDIF SDO WS SCK DE CDCK INT
3D05 100R 3D06 100R 3D07 4K7 3D08 4K7 3D09 33R
7D01 BSN20 7D02 BSN20 ID02 ID03
3D11 100R 3D12 3K9 2D03 10u 2D04 10n 2D05 47n 2D06 10u ID04 ID05 ID06 ID07 ID22
B 13 TO MUX-SYNC INTF
H_HDMI V_HDMI FD05 FD06
20SPDIF (NC) FD12
3D21-44 533R 3D21-33 533R 3D21-22 533R 3D21-11 533R FD15
3D22 33R 3D23 33R
AGND GND PGND DVCGNDR DVCGNDG DVCGNDB DGND DGND_NS FD17
HDMI_Y(0:7) HDMI_CbCr(0:7)
3D15-11 3D15-22 3D15-33 3D15-44 3D16-11 3D16-22 3D16-33 3D16-44 3D17-11 3D17-22 3D17-33 3D17-44 3D18-11 3D18-22 3D18-33 3D18-44 6 33R 7 33R 8 33R 5 33R
HDMI_Y(0) HDMI_Y(1) HDMI_Y(2) HDMI_Y(3) HDMI_Y(4) HDMI_Y(5) HDMI_Y(6) HDMI_Y(7)
HDMI_CbCr(0) HDMI_CbCr(1) HDMI_CbCr(2) HDMI_CbCr(3) HDMI_CbCr(4) HDMI_CbCr(5) HDMI_CbCr(6) HDMI_CbCr(7)
B 7 TO SCALER
AUDIO DAC
3D19 1R0 3D20 1R0
2D32 47u 6.3V 2D33 100n FD13 FD14 2D34 47u 6.3V 2D35 100n
7D04 UDA1334BTN2
VDDA VDDD BCK WS DATAI SYSCLK MUTE DEEM PCS VOL VOR VSSA VSSD VREF_DAC
DIGITAL INTERFACE DE-EMPHASIS INTERPOLATION FILTER NOISE SHAPER DAC DAC
SEOR0 SEOR1
2D36 1u0 2D38 47u 6.3V 2D39 100n 2D40 1u0 10V
3D24 100K 3D25 100R 3D34 100K 2D37 10n 3D26 100K 3D27 100R 3D35 100K 2D41 10n
ID08 ID09 ID10 ID11 ID12 ID13 ID14 ID15
B 22 TO DIGITAL-IO (CINCH ONLY)
AV3_LEFT AV3_HDMI-AUDIO_SEL AV3_RIGHT
ID17 FD16 ID16
4D00 4D01 FOR SET W/O HDMI
+3V3SW
7D05 HEF4053B VDX MDX
3D30 RES 3D31 RES 3D32 RES NC 3D33 RES NC
2D44 1u0 ID18 AudioIN2R
2D45 1u0 ID19 AudioIN2L
B 2 TO HERCULES
HDMI_VDV HDMI_VCLK
FROM SCALER B 7

3139 123 6093.1
F_15430_012.eps 140405

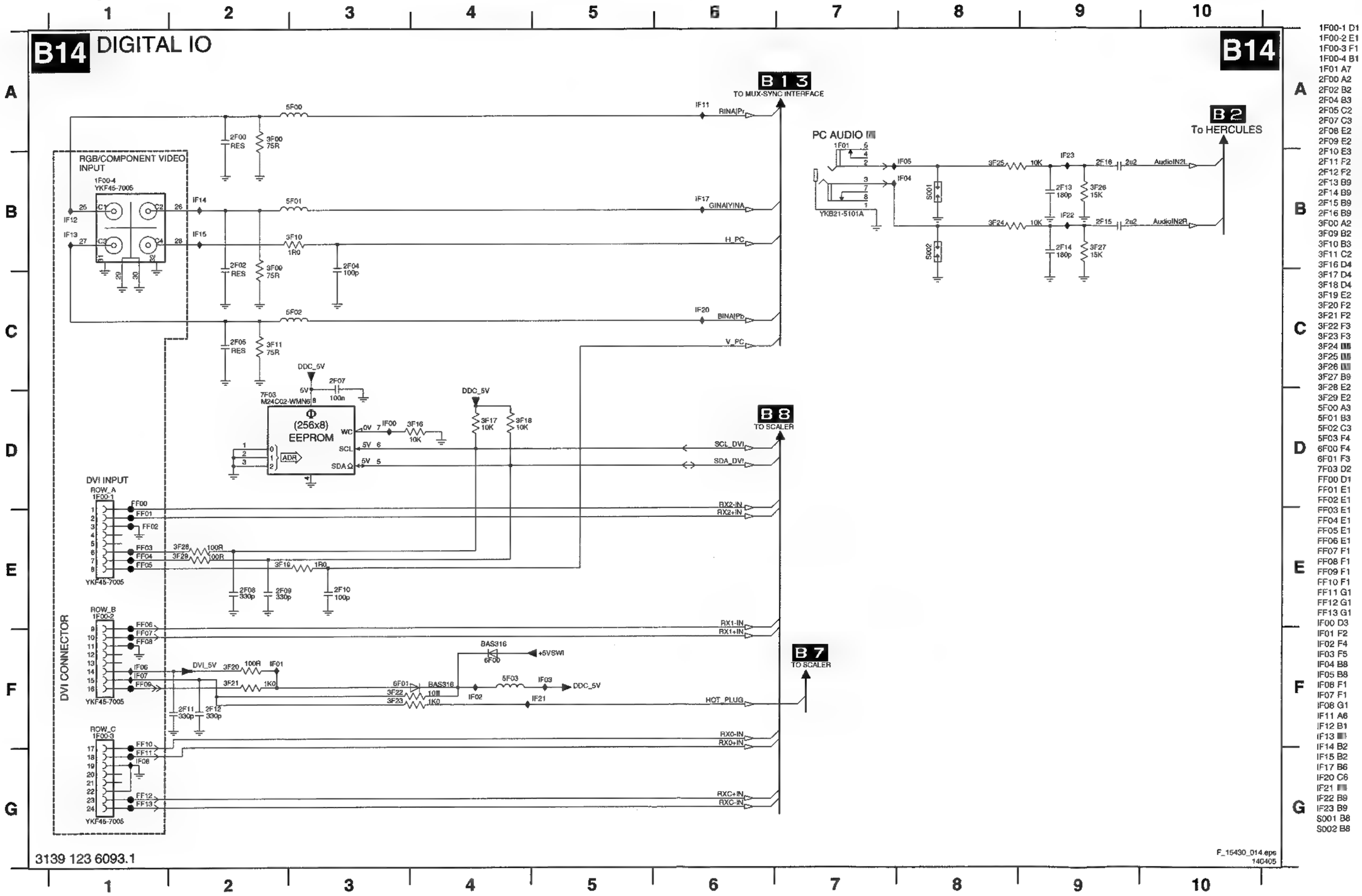
SSB: MUX Sync Interface

B13 MUX-SYNC INTERFACE



2E00 C2	3E50 C3	IE34 D10
2E01 C2	3E51 C3	IE35 B7
2E02 C2	3E52 C3	IE36 B7
2E03 B5	3E53	IE37 B7
2E04 B7	3E54 D3	
2E05 B7	3E55 D3	
2E06 B7	4E03 B6	
2E07 C7	4E10 E2	
2E08 C7	4E11 G3	
2E09 C7	4E12 D5	
2E10 C7	4E13 D5	
2E11 D7	4E14 D5	
2E12 D7	5E00 B4	
2E13 D7	5E01 B8	
2E14 D7	5E02 A10	
2E15 A10	5E03 E3	
2E16 B8	6E00 F2	
2E17 B8	6E01 F2	
2E18 B6	6E02 F2	
2E19	6E03 F2	
2E20	7E00 B4	
2E21 A9	7E01 B8	
2E22 B9	7E02 A10	
2E23	7E03 E3	
2E24 C10	7E04-1 E5	
2E25 C10	7E04-2 E6	
2E26 C10	7E04-3 F5	
2E27 C10	7E04-4 F6	
2E28 C10	7E04-5 G5	
2E29 D10	7E04-6 G6	
2E30 D10	7E05-1 E9	
2E31 E3	7E05-2 E10	
2E32 E8	7E05-3 F9	
2E33 C2	7E05-4 F10	
2E34 C2	7E05-5 G9	
2E35 D2	7E05-6 G10	
2E36 E10	FE00 B2	
2E37 B9	FE01 B2	
2E38 B9	FE02 B2	
2E39 B9	FE03 C5	
3E00 A2	FE04 C7	
3E01 A2	FE05 D7	
3E02 A2	FE06 B8	
3E06 C3	FE07 D8	
3E07 C3	FE08 B11	
3E08 C3	FE09 C9	
3E09 C3	FE10 C9	
3E10 C3	FE11 C9	
3E11 C3	FE12 C9	
3E12 C5	FE13	
3E13 B6	IE00 B4	
3E14	IE01 B7	
3E15 B6	IE02 B7	
3E16 B6	IE03 D6	
3E17 B6	IE04 D7	
3E18 B7	IE05 A9	
3E19 C8	IE06 B9	
3E20 C6	IE07 B9	
3E21 D6	IE08 A10	
3E22 D6	IE09	
3E23 D7	IE10 F2	
3E24 C10	IE11 F2	
3E25 C10	IE12 F2	
3E26 C10	IE13 C3	
3E27 C10	IE14 C3	
3E28 C10	IE15 C3	
3E29 D10	IE16 C3	
3E30 D10	IE17 A10	
3E31 E2	IE18 D2	
3E32 F2	IE19 C6	
3E33 F2	IE20 C7	
3E34 F2	IE21 D6	
3E35 E5	IE22 C7	
3E36 F5	IE23 D7	
3E37 G4	IE24 F7	
3E38 F6	IE25 C7	
3E39 E6	IE26 C7	
3E41 E9	IE27 E7	
3E42 F9	IE28 G6	
3E43 G9	IE29 A10	
3E44 E11	IE30 A10	
3E45 F11	IE31 E11	
3E46 G11	IE32 C10	
3E49 G5	IE33 C11	

SSB: Digital I/O



3139 123 6093.1

1F00-1 D1
1F00-2 E1
1F00-3 F1
1F00-4 B1
1F01 A7
2F00 A2
2F02 B2
2F04 B3
2F05 C2
2F07 C3
2F08 E2
2F09 E2
2F10 E3
2F11 F2
2F12 F2
2F13 B9
2F14 B9
2F15 B9
2F16 B9
3F00 A2
3F09 B2
3F10 B3
3F11 C2
3F16 D4
3F17 D4
3F18 D4
3F19 E2
3F20 F2
3F21 F2
3F22 F3
3F23 F3
3F24
3F25
3F26
3F27 B9
3F28 E2
3F29 E2
5F00 A3
5F01 B3
5F02 C3
5F03 F4
6F00 F4
6F01 F3
7F03 D2
FF00 D1
FF01 E1
FF02 E1
FF03 E1
FF04 E1
FF05 E1
FF06 E1
FF07 F1
FF08 F1
FF09 F1
FF10 F1
FF11 G1
FF12 G1
FF13 G1
IF00 D3
IF01 F2
IF02 F4
IF03 F5
IF04 B8
IF05 B8
IF06 F1
IF07 F1
IF08 G1
IF11 A6
IF12 B1
IF13
IF14 B2
IF15 B2
IF17 B6
IF20 C6
IF21
IF22 B9
IF23 B9
S001 B8
S002 B8

SSB: Analog I/O

B15 SCART ANALOGUE IO

B15

SCART 1

HR-AR0781S-2

SCART 2

HR-AR0781S-2

TO HERCULES B2

RESERVED FOR DMMI

RESERVED FOR DMMI

TO MUX-SYNC INTF B13

TO HERCULES B2

TO HERCULES B2

FROM SIDE CONNECTOR B17

FROM SCALER B7

DMMI CONNECTOR

RESERVED FOR DMMI

AF732L-N2G1A

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SSB: Top Connectors

B16 TOP CONNECTORS

FOR UFD ONLY

UFD CONTROL (1M03) 1J00
IJ01 POR (NC) LAMP_ON_OFF_1
IJ02
IJ03
IJ04
TEMP_SENSOR (NC) IJ05 STANDBY_1
IJ06 NC
IJ07 POWER_UP_OK_1
5J05 RES
3J06 RES
4J02 RES
2J16 RES
2J33 RES
2J20 RES
2J34 RES

B6 FROM SCALER INTERFACE
FAN_SPEED
PROTECT_AUD
POWER_UP_OK IJ12
FROM SCALER B8
FROM SCALER B7

PROTECT_AUD

B5 FROM AUDIO
AUDIO-L 5J01 FJ10
AUDIO-R 5J02 FJ12
FJ11
AUDIO-SW (NC)
3V3 SOUND_ENABLE_1 FJ13
3V3 POR_AUDIO FJ14
(1M52) 1J04
B9B-PH-K-S(LF)
2J26 100p 2J27 100p 2J28 100p 2J29 100p 2J36 1n0
TO/FROM 1002 OF CLASS-D AUDIO AMPLIFIER C

B20 FROM EPLD
B_LT_PWM FJ15
G_LT_PWM FJ16
R_LT_PWM FJ17
B_RT_PWM FJ18
G_RT_PWM FJ19
R_RT_PWM FJ20
1J05
B7B-PH-K-S(LF)
2J04 100p 2J05 100p 2J06 100p 2J07 100p 2J08 100p 2J09 100p
AMBIENT LIGHT (TOP)

B_LB_PWM FJ21
G_LB_PWM FJ22
R_LB_PWM FJ23
B_RB_PWM FJ24
G_RB_PWM FJ25
R_RB_PWM FJ26
1J06
B7B-PH-K-S(LF)
2J10 100p 2J11 100p 2J12 100p 2J13 100p 2J14 100p 2J15 100p
AMBIENT LIGHT (BOTTOM)
RESERVED

UFD SUPPLY (1M46) 1J01
FJ00
FJ01 (NC)
FJ02 5V(NC) 1J07 3A T +12V_UFD
FJ03 1J08 +5V_UFD
FJ04 +33V_TUN(NC)
FJ05 NC
4J01
2J31 1n0

B6 TO DC-DC CONVERTER
5J04 +5V

TO/FROM PSU (SUPPLY FOR LCD) 1J02
VP
GND_AUDIO
FJ06 3V2 +3V3STBY
FJ07 +12VUNREG 11V6
IJ08 5J03 POWER_DOWN
IJ09 3J05 68R STANDBY 3V1
IJ10 3J03 68R BACKLIGHT_CTRL
IJ11 3J04 68R LAMP_ON_OFF 3V2
IJ13
B12P-PH-K-S(LF)
2J30 1n0
2J02 1n0 2J35 1n0 2J18 100p 2J19 100p 2J17 100p
2J22 100p 2J23 20p 2J21 100p

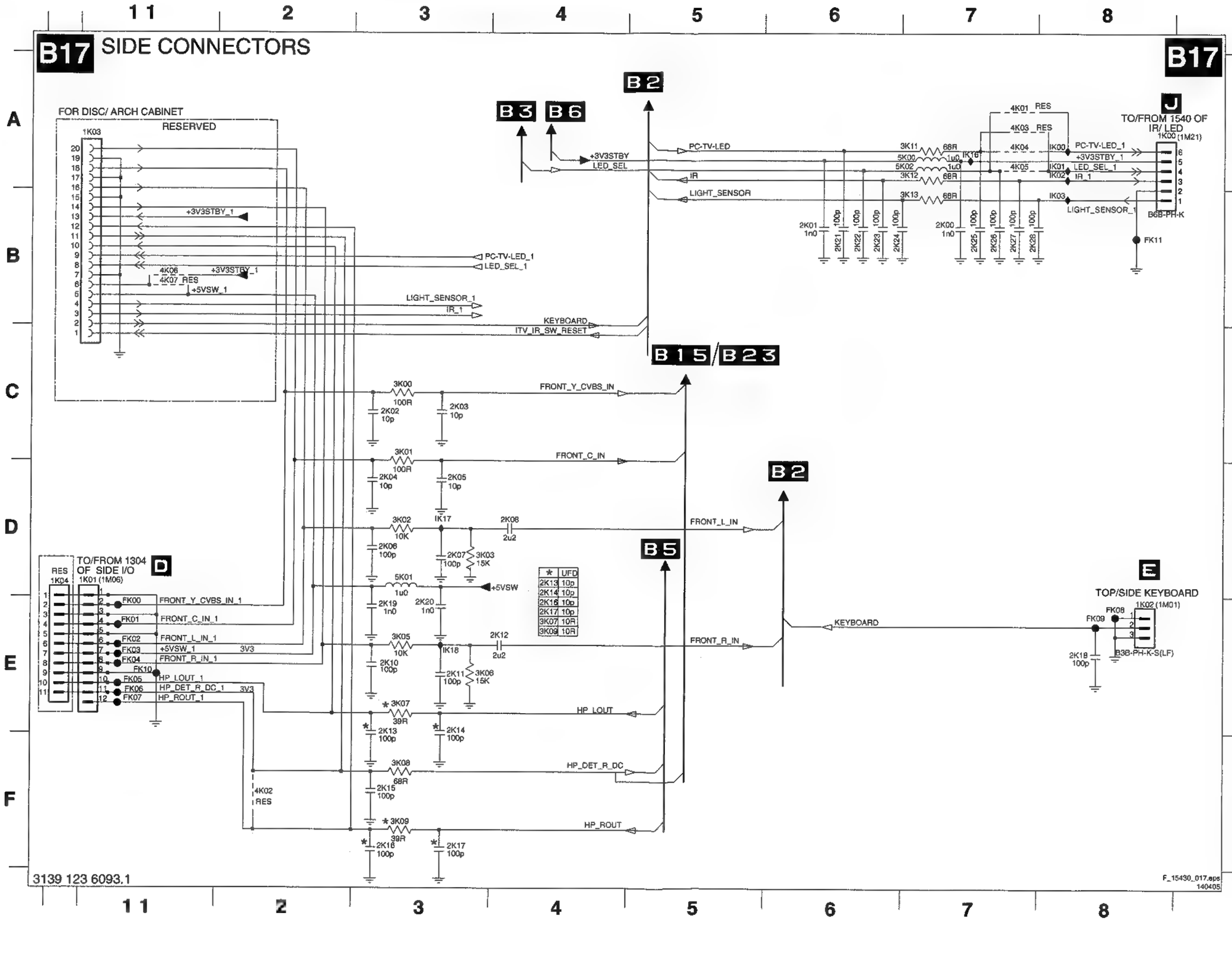
B9 FROM SCALER INTERFACE
FROM SCALER B8

TO/FROM 1003 OF CLASS-D AUDIO AMP (+18V / +24V) C
1J03
B3B-PH-K-S(LF)
FJ08 VP
FJ09
GND_AUDIO
2J03 1n0
GND_AUDIO

3139 123 6093.1
F_15430_016.eps 140405

1J00 B1 FJ25 E7
1J01 C1 FJ26 E7
1J02 D1 IJ01 B1
1J03 F1 IJ02 B1
1J04 B8 IJ03 B1
1J05 C8 IJ04 B1
1J06 E8 IJ05 B1
1J07 C2 IJ06 B1
1J08 C2 IJ07 B1
2J02 F2 IJ08 E2
2J03 F2 IJ09 E2
2J04 D6 IJ10 E2
2J05 D7 IJ11 E2
2J06 D7 IJ12 B4
2J07 D7 IJ13 E4
2J08 D7
2J09 D7
2J10 E6
2J11 E7
2J12 E7
2J13 E7
2J14 E7
2J15 E7
2J16 C2
2J17 F3
2J18 F2
2J19 F3
2J20 C3
2J21 F3
2J22 F3
2J23 F3
2J26 C6
2J27 C7
2J28 C7
2J29 C7
2J30 F2
2J31 D2
2J33 C2
2J34 C3
2J35 F2
2J36 C7
3J03 E3
3J04 E3
3J05 E3
3J06 B3
4J01 D2
4J02 C2
5J01 B7
5J02 B7
5J03 E2
5J04 C2
5J05 B3
FJ00 C1
FJ01 C1
FJ02 C1
FJ03 C1
FJ04 C1
FJ05 D1
FJ06 E2
FJ07 E2
FJ08 F1
FJ09 F2
FJ10 B7
FJ11 B8
FJ12 B7
FJ13 B7
FJ14 C7
FJ15 C7
FJ16 C7
FJ17 D7
FJ18 D7
FJ19 D7
FJ20 D7
FJ21 E7
FJ22 E7
FJ23 E7
FJ24 E7

SSB: Side Connectors



1K00 A8
1K01 D1
1K02 E8
1K03 A1
1K04 D1
2K00 B7
2K01 B6
2K02 C3
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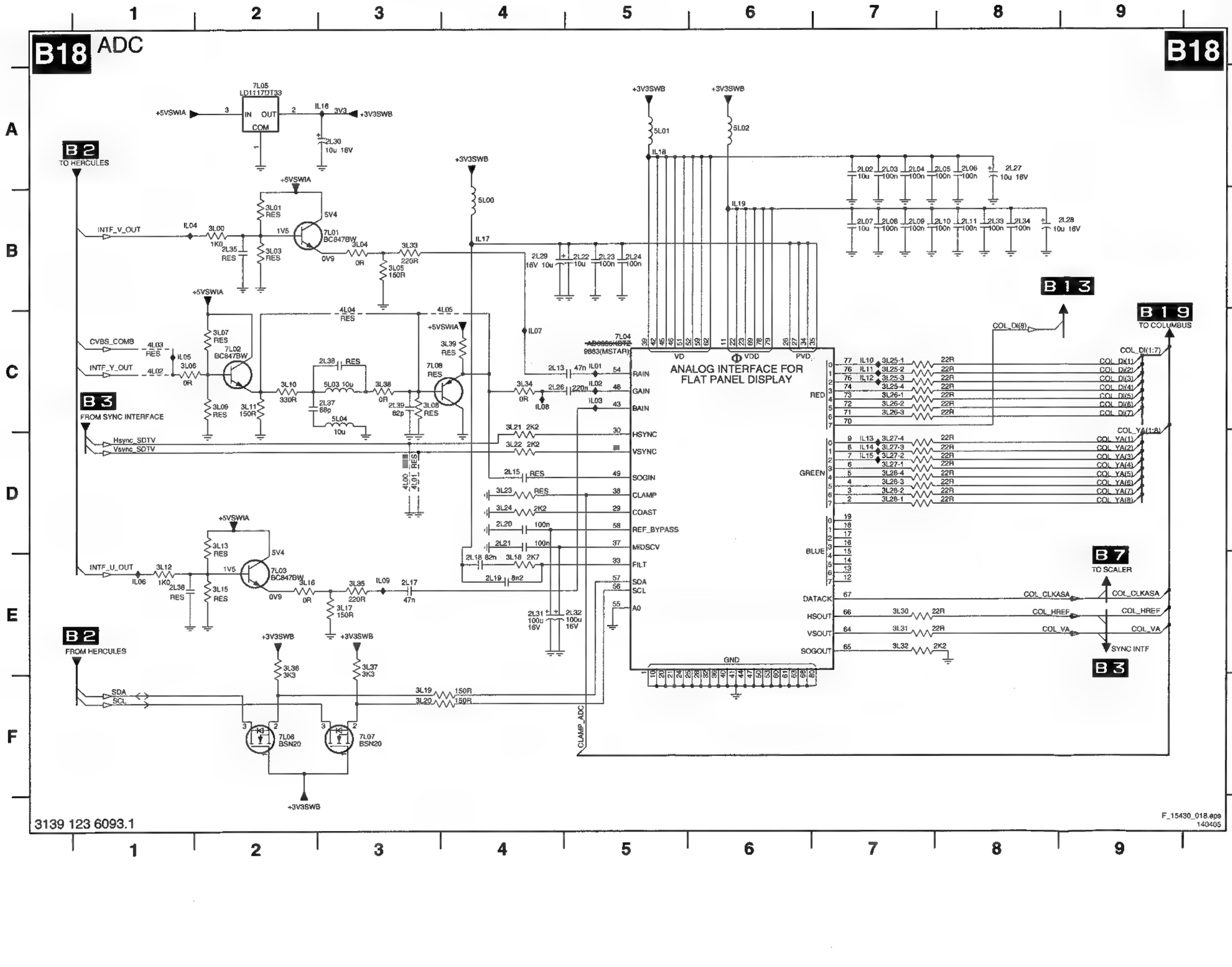
2K04 D3
2K05 D3
2K06 D3
2K07 D3
2K08 D4
2K10 E3
2K11 E3
2K12 E4
2K13 F3
2K14 E3
2K15 F3
2K16 F3
2K17 F3
2K18 E8
2K19 E3
2K20 E3
2K21 B6
2K22 B6
2K23 B6
2K24 B6
2K25 B7
2K26 B7
2K27 B7
2K28 B7
3K00 C3
3K01 C3
3K02 D3
3K03 D3
3K05 E3
3K06 E3
3K07 E3
3K08 F3
3K09 F3
3K11 A7
3K12 A7
3K13 B7
4K01 A7
4K02 F2
4K03 A7
4K04 A7
4K05 A7
4K06 B1
4K07 B1
5K00 A7
5K01 D3
5K02 A7
FK00 E1
FK01 E1
FK02 E1
FK03 E1
FK04 E1
FK05 E1
FK06 E1
FK07 E1
FK08 E8
FK09 E8
FK10 E1
FK11 B8
IK00 A8
IK01 A8
IK02 A8
IK03 B8
IK16 A7
IK17 D3
IK18 E3

SSB: ADC



2L02 A7	3L37 E3
2L03 A7	3L38 C3
2L04 A7	3L39 C4
2L05 A8	4L00 D3
2L06 A8	4L01 D3
2L07 B7	4L02 C1
2L08 B7	4L03 C1
2L09 B7	4L04 C3
2L10 B8	4L05 C4
2L11 B8	5L00 B4
2L13 C4	5L01 A5
2L15 D4	5L02 A6
2L17 E3	5L03 C3
2L18 E4	5L04 C3
2L19 E4	7L01 B3
2L20 D4	7L02 C2
2L21 D4	7L03 E2
2L22 B5	7L04 C5
2L23 B5	7L05 A2
2L24 B5	7L06 F2
2L26 C4	7L07 F3
2L27 A8	7L08 C3
2L28 B9	IL01 C5
2L29 B4	IL02 C5
2L30 A3	IL03 C5
2L31 E4	IL04 B1
2L32 E5	IL05 C1
2L33 B8	IL06 E1
2L34 B8	IL07 C4
2L35 B2	IL08 C4
2L36 E1	IL09 E3
2L37 C3	IL10 C7
2L38 C3	IL11 C7
2L39 C3	IL12 C7
3L00 B2	IL13 D7
3L01 B2	IL14 D7
3L03 B2	IL15 D7
3L04 B3	IL16 A3
3L05 B3	IL17 B4
3L06 C1	IL18 A5
3L07 C2	IL19 B6
3L08 C3	
3L09 C2	
3L10 C2	
3L11 C2	
3L12 E1	
3L13 D2	
3L15 E2	
3L16 E2	
3L17 E3	
3L18 E4	
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3L27-2 D7	
3L27-3 D7	
3L27-4 D7	
3L28-1 D7	
3L28-2 D7	
3L28-3 D7	
3L28-4 D7	
3L30 E7	
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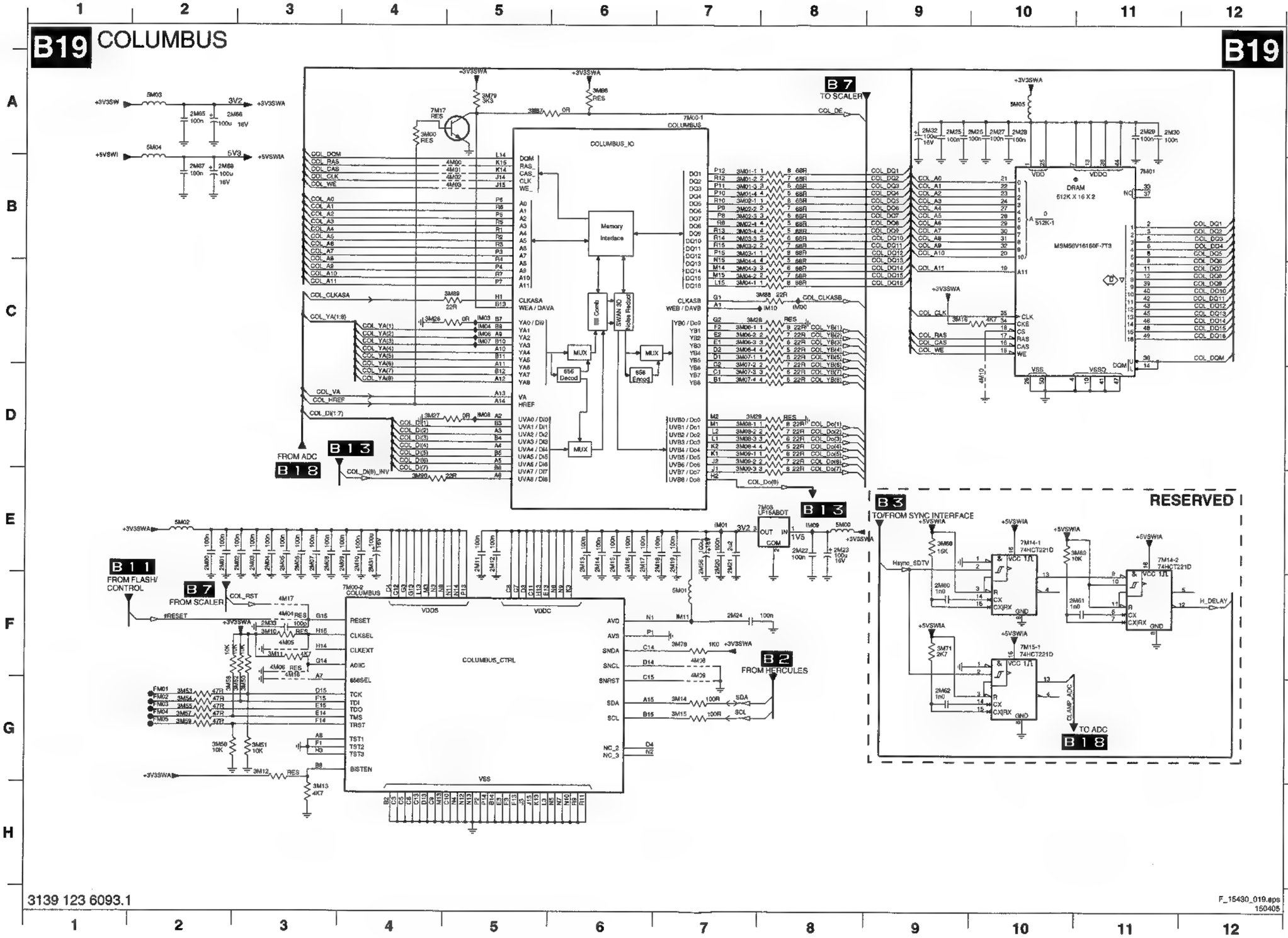
3L32 E7	
3L33 B3	
3L34 C4	
3L35 E3	
3L36 E2	

SSB: Columbus

B19 COLUMBUS



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2M05 E3	4M01 B5
2M06 E3	4M02 B5
2M07	4M03 B5
2M08 E3	4M04 F3
2M09 E4	4M05 F3
2M10 E4	4M06 F3
2M11 E5	4M08 F7
2M12 E5	4M09 F7
2M13 E6	4M10 D10
2M14 E6	4M16 F3
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2M16 E6	5M00 E8
2M17 E6	5M01 F7
2M18 E7	5M02 E2
2M19 E7	5M03 A2
2M20 E7	5M04 A2
2M21 E7	5M05 A10
2M22 E8	7M00-1 A7
2M23	7M00-2 F4
2M24 F7	7M01 B11
2M25 A9	7M03
2M26 A10	7M14-1 E10
2M27 A10	7M14-2 E11
2M28 A10	7M15-1 F10
2M29 A11	7M17 A4
2M30 A11	FM01 G2
2M31 E4	FM02 G2
2M32 A9	FM03 G2
2M33 F3	FM04 G2
2M56 E7	FM05 G2
2M60 F9	IM00 C8
2M61 F11	IM01 E7
2M62 G9	IM03 C5
2M65 A2	IM04 C5
2M66 A2	IM06 C5
2M67	IM07 C5
2M68 B2	IM08 D5
3M00 A4	IM09 E8
3M01-1 B7	IM10 C8
3M01-2 B7	IM11 F7
3M01-3 B7	
3M01-4 B7	
3M02-1 B7	
3M02-2	
3M02-3	
3M02-4 B7	
3M03-1 B7	
3M03-2 B7	
3M03-3 B7	
3M03-4 B7	
3M04-1 C7	
3M04-2 C7	
3M04-3 C7	
3M04-4 C7	
3M06-1 C7	
3M06-2 C7	
3M06-3 C7	
3M06-4 C7	
3M07-1 C7	
3M07-2 D7	
3M07-3 D7	
3M07-4 D7	
3M08-1 D7	
3M08-2 D7	
3M08-3 D7	
3M08-4 D7	
3M09-1 D7	
3M09-2 D7	
3M09-3 E7	
3M10 F3	
3M11 F3	
3M12 G3	
3M13 H3	
3M14 G7	
3M15 G7	
3M16 C9	
3M26 C4	
3M27	
3M28 C7	
3M29 D7	
3M50 G3	
3M51 G3	
3M52 G3	
3M53 G2	
3M54 G2	
3M55 G2	
3M56 G2	
3M57 G2	
3M58 G2	
3M59 G2	
3M68 E9	
3M69 E11	
3M71 F9	
3M78 F7	
3M79 A5	
3M86 A6	

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SSB: EPLD

B20 EPLD

B20

FOR DEBUGGING

LVDS IN

CONTROL SIGNALS

LCD PANEL INTERFACE RECEIVER

BANK 1

BANK 4

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150405

3139 123 6093.1

1N01 A9 7N02-2 D7
1N02 D11 7N02-5 D10
1N03 F12 7N03-1 C3
1N05 D5 7N03-2 C2
2N01 A2 7N04 D5
2N02 C1 FN01 B4
2N03 C2 FN02 B6
2N04 C2 FN03 C5
2N05 D4 FN04 A8
2N06 D4 FN05 B8
2N07 D5 FN06 B8
2N08 D6 FN07 B8
2N09 D6 FN08 B8
2N10 D6 FN09 B8
2N11 B7 FN10 B8
2N12 B7 FN11 D5
2N13 B7 FN12 E5
2N14 B7 FN13 E5
2N15 B8 FN14 F5
2N16 E11 FN15 F5
2N17 F11 FN16 F5
2N18 F11 FN17 G5
2N19 F11 FN18 D9
2N20 F11 FN19 D9
3N01 A3 FN20 F9
3N02 A3 FN21 F11
3N03 A3 FN22 F11
3N04 A3 FN23 F11
3N05 A3 FN24 F12
3N06 A3 FN25 F4
3N07 C2 FN26 D2
3N08 C2 FN27 D2
3N09 B4 FN28 D2
3N10 C2 FN29 D2
3N11 C4 FN30 D2
3N12 A5 FN31 D2
3N13 A5 FN32 D2
3N14 A6 FN33 D3
3N15 B6 FN34 D3
3N16 B6 FN35 D3
3N17 B6 IN01 B3
3N18 B6 IN02 B3
3N19 C5 IN03 ■
3N20 C5 IN04 B3
3N21 E3 IN05 ■
3N22 E3 IN06 C2
3N23 E3 IN07 D4
3N24 F3 IN08 C2
3N25 F3 IN09 C2
3N26 D4 IN10 B3
3N27 D6 IN11 B4
3N28 F8 IN12 C5
3N29 E11 IN13 D5
3N30 E11 IN14 D4
3N31 E11 IN15 D11
3N32 E11 IN16 D11
3N33 E11 IN17 D11
3N34 E11 IN18 D11
3N35 E11 IN19 F9
3N36 E11
3N37 E11
3N38 F11
3N39 F11
3N40 F11
3N41 F11
3N42 F11
3N43 F11
3N44 F11
3N45 F11
3N46 D10
3N47 D10
4N01 D2
4N02 D2
4N03 D2
4N04 D2
4N05 D2
4N06 D2
4N07 D2
4N08 D2
4N09 D2
4N10 D2
4N11 D2
4N12 D2
4N13 D2
4N14 D2
4N15 D3
4N16 D3
4N17 D3
4N18 D3
4N19 D3
4N20 D3
4N21 D9
4N22 D9
5N01 A8
5N02 D4
5N03 D4
5N04 D5
5N05 C6
6N01 F9
7N01 A2
7N02-1 A4

SSB: EPLD

B21 EPLD

B21

EAGLE INTERFACE

LVDS TRANSMITTER

LVDS OUT

FOR MFD ONLY

FOR UFD ONLY

TO LCD PANEL (TIMING CONTROL)

FROM SCALER INTERFACE B9

FROM EPLD B20

FROM DC-DC CONVERTER B6 FOR LCD ONLY

1P01 E
1P02 E
1P03 F
1P04 F
1P05 G
1P06 A
1P07 D
2P01 B
2P02 B
2P03 B
2P04 B
2P05 B
2P06 B
2P07 B
2P08 B
2P09 B
2P10 B
2P11 B
2P12 B
2P13 B
2P14 B
2P15 B
2P16 B
2P17 B
2P18 B
2P19 B
2P20 B
2P21 B
2P22 C
2P23 C
2P24 C
2P25 C
2P26 C
2P27 C
2P28 C
2P29 C
2P30 C
2P31 C
2P32 C
2P33 C
2P34 C
2P35 B
2P36 C
2P37 E
2P38 E
2P39 E
2P40 F
2P41 F
2P42 F
2P43 F
2P44 G
2P45 G
3P01 D
3P03 E
3P04 D
3P05 D
4P01 F
4P02 F
4P03 F
4P04 F
4P05 F
4P06 F
4P07 F
4P08 F
4P09 D
4P10 E
5P01 A
5P02 B
5P03 C
5P04 D
5P05 D
5P06 D
7N02-3
7N02-4
7N02-6
7P01 B
7P02 D
FP01 A
FP02 A
FP03 B
FP04 B
FP05 C
FP06 C
FP07 E
FP08 E

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SSB: Diversity Tables B9-B21

B9 MUX-SYNC INTERFACE

Item	LC4.3x	LC4.8x	LC4.9x	Description
2A00			V	CER2 0603 X7R 16V 100N COL
2A01			V	CER1 0402 NP0 50V 100P COL
2A08			V	CER1 0402 NP0 50V 100P COL
2A03		V		CER2 0603 Y5V 10V 1U COL
2A12		V	V	CER2 0402 X7R 16V 10N COL
2A13		V	V	CER2 0402 Y5V 16V 100N COL
3A00			V	RST SM 0402 68R PM5 COL
3A01			V	RST SM 0402 68R PM5 COL
3A02	V	V		RST SM 0402 1K PM5 COL
3A06		V		RST SM 0603 10K PM5COL
3A06	V			RST SM 0603 JUMP. 0R05 COL
3A07			V	RST SM 0402 10K PM5 COL
3A07				RST SM 0402 68R PM5 COL
3A08			V	RST SM 0402 10K PM5 COL
3A10		V	V	RST SM 0402 10K PM5 COL
3A11		V	V	RST SM 0402 10K PM5 COL
3A13		V	V	RST SM 0402 10K PM5 COL
3A14		V	V	RST SM 0402 560R PM5 COL
4A03	V	V		RST SM 0603 JUMP. 0R05 COL
4A04			V	RST SM 0402 JUMP. 0R05 COL
4A05	V			RST SM 0402 JUMP. 0R05 COL
4A06	V			RST SM 0402 JUMP. 0R05 COL
5A00			V	FXDIND 0805 100MHZ 30R COL R
6A01		V	V	DIO REG SM BZX384-C3V9 COL R
7A00			V	IC SM PCA9515ADP (PHSE) R
7A02		V	V	TRA SIG SM BC847BW (COL) R
7A03		V	V	TRA SIG SM BC847BW (COL) R

B13 MUX-SYNC INTERFACE

ITEM	A/ME/U/AP-DVB (with Teletext)	EU-DVB (with Teletext)	NAFTA/LT & China (non-Teletext)	DESCRIPTION
2E00	V		V	CER2 0603 X5R 6V3 4U7 PM10 R
2E01	V		V	CER2 0603 X5R 6V3 4U7 PM10 R
2E02	V		V	CER2 0603 X5R 6V3 4U7 PM10 R
2E04	V	V		CER2 0402 X5R 6V3 1U PM20 R
2E05	V	V		CER2 0402 X5R 6V3 1U PM20 R
2E06	V	V		CER2 0402 X5R 6V3 1U PM20 R
3E06	V		V	RST SM 0402 47K PM5 COL
3E07	V		V	RST SM 0402 47K PM5 COL
3E08	V		V	RST SM 0402 47K PM5 COL
3E13	V	V		RST SM 0402 330R PM5 COL
3E14	V	V		RST SM 0402 330R PM5 COL
3E15	V	V		RST SM 0402 330R PM5 COL
3E16	V	V		RST SM 0402 330R PM5 COL
3E17	V	V		RST SM 0402 330R PM5 COL
3E18	V	V		RST SM 0402 330R PM5 COL

B15 ANALOG I/O SCART

Item	26/32PF	DVB-T 26/32PF	37/42PF	DVB-T 37/42PF	Description
1G01	V	V			SOC EURO H 21P F BK R-GRND B
1G01			V	V	SOC EURO H 21P F SHD R-GRND Y
1G02	V	V			SOC EURO H 21P F BK R-GRND B
1G02			V	V	SOC EURO H 21P F SHD R-GRND Y
1G03		V		V	CON H 32P F 0.50 SM FPC 0.3 R
2G29		V		V	ELCAP SM 16V 10U PM20 COL R
2G30		V		V	CER2 0603 X7R 16V 100N COL
2G31		V		V	CER2 0603 X7R 16V 100N COL
2G32				V	CER2 0603 Y5V 25V 100N COL
2G33		V		V	CER2 0603 Y5V 16V 220N COL
2G34		V		V	ELCAP SM 16V 10U PM20 COL R
2G35		V		V	CER2 0603 Y5V 25V 100N COL
2G36		V		V	CER2 0603 Y5V 10V 1U COL
2G37		V		V	RST SM 0603 330R PM5 COL
2G38		V		V	CER2 0603 Y5V 10V 1U COL
2G39		V		V	CER2 0603 Y5V 10V 1U COL
2G40		V		V	RST SM 0603 JUMP. 0R05 COL
2G41		V		V	RST SM 0603 330R PM5 COL
2G43		V		V	CER2 0603 X7R 50V 1N COL
2G45		V		V	CER2 0603 X7R 50V 1N COL
2G46		V		V	CER2 0603 X7R 50V 1N COL
2G53		V		V	CER2 0603 X5R 6V3 2U2 PM10 R
2G54		V		V	CER2 0603 X5R 6V3 2U2 PM10 R
2G85		V		V	CER2 0603 X5R 6V3 4U7 PM10 ■
2G85		V		V	CER2 0603 X5R 6V3 4U7 PM10 R
2G88		V		V	CER2 0603 X5R 6V3 4U7 PM10 R
2G86		V		V	CER2 0603 X5R 6V3 4U7 PM10 R
3G83		V		V	RST SM 0603 10K PM5COL
3G84		V		V	RST SM 0603 10K PM5COL
3G85		V		V	RST SM 0603 10K PM5COL
3G66				V	RST SM 0603 150R PM5 COL
3G87		V		V	RST SM 0603 15K PM5 COL
3G58		V		V	RST SM 0603 15K PM5 COL
3G59		V		V	RST SM 0603 47K PM5 COL
3G70		V		V	RST SM 0603 47K PM5 COL
3G71		V		V	RST SM 0603 560R PM5 COL
3G72		V		V	RST SM 0603 10K PM5COL
3G73		V		V	RST SM 0603 47K PM5 COL
3G75		V		V	RST SM 0603 100R PM5 COL
3G76		V		V	RST SM 0603 100R PM5 COL
3G77		V		V	RST SM 0603 47K PM5 COL
3G79		V		V	RST SM 0603 47K PM5 COL
3G81		V		V	RST SM 0603 47K PM5 COL
3G83		V		V	RST SM 0603 100R PM5 COL
3G84		V		V	RST SM 0603 100R PM5 COL
3G86		V		V	RST SM 0603 47K PM5 COL
3G88		V		V	RST SM 0603 75R PM5 COL
3G89		V		V	RST SM 0603 47K PM5 COL
3G92		V		V	RST SM 0603 47K PM5 COL
3G93		V		V	RST SM 0603 47K PM5 COL
3G94		V		V	RST SM 0603 47K PM5 COL
3G85		V		V	RST SM 0603 47K PM5 COL
4G09		V		V	RST SM 0603 JUMP. 0R05 COL
4G11	V		V		RST SM 0603 JUMP. 0R05 COL
4G12	V		V		RST SM 0603 JUMP. 0R05 COL
4G13	V		V		RST SM 0603 JUMP. 0R05 COL
4G14	V		V		RST SM 0603 JUMP. 0R05 COL
4G15	V		V		RST SM 0603 JUMP. 0R05 COL
4G16	V		V		RST SM 0603 JUMP. 0R05 COL
4G17	V		V		RST SM 0603 JUMP. 0R05 COL
4G18	V		V		RST SM 0603 JUMP. 0R05 COL
4G19	V		V		RST SM 0603 JUMP. 0R05 COL
4G22		V		V	RST SM 0603 JUMP. 0R05 COL
5G01		V		V	FXDIND 0603 100MHZ 120R COL R
6G02		V		V	DIO SIG SM BAS316 (COL) R
7G07		V		V	IC SM 74HC4053D (PHSE) R
7G08		V		V	TRA SIG SM BC847B (COL) R
7G09		V		V	IC SM ADG734BRUZ (ANA0) R

B16 SIDE CONNECTORS

Item	LC4.3x - CINCH	LC4.3E - SCART	LC4.9x - PDP	LC4.8x - LCD	Description
1J00			V	V	CON V 10P M 2.00 PH B
1J01			V	V	CON V 11P M 2.00 PH B
1J02	V	V			CON V 12P M 2.00 PH B
1J03	V	V			CON V 3P M 2.00 PH B
1J07			V	V	FUSE SM T 3A 125V UL R
1J08			V	V	FUSE SM F 630MA 50V UL R
2J31			V	V	CER1 0402 NP0 50V 100P COL
3J03	V	V		V	RST SM 0402 68R PM5 COL
3J04	V	V		V	RST SM 0402 68R PM5 COL
4J01			V	V	RST SM 0402 JUMP. 0R05 COL
5J04			V	V	IND FXD 1206 EMI 100MHZ 120R R

B17 SIDE CONNECTORS

Item	LC4.3x - ME5 styling	LC4.3x - Arch Styling	LC4.8x - LCD	LC4.9x - PDP	Description
1K00	V		V	V	CON V 6P M 2.00 PH B
1K01	V				CON V 12P M 2.00 PH B
1K03		V			CON V 20P F 1.25 FFC 0.3 B
1K04			V	V	CON V 11P M 2.00 PH B
2K15	V	V			CER1 0402 NP0 50V 100P COL
3K08	V	V			RST SM 0402 68R PM5 COL
4K02			V	V	RST SM 0603 JUMP. 0R05 COL
4K06		V			RST SM 0402 JUMP. 0R05 COL
5K01	V	V		V	FXDIND SM 0603 1U PM10 COL R

B18 ADC

Item	non-DVB sets with 3D Comb Filter	DVB sets with 3D Comb Filter	Description
[illegible]		V	RST SM 0402 JUMP. 0R05 COL
[illegible]		V	RST SM 0402 JUMP. 0R05 COL
5L04		V	RST SM 0603 JUMP. 0R05 COL

B20 & B21 PIXEL PLUS

Item	LC4.3 non PIXEL+	LC4.3 with PIXEL+	42PF7320/28	LC4.9/LC4.9 non PIXEL+	LC4.8/LC4.9 with PIXEL+	Description
1N02		V	V		V	CON V 4P M 2.00 SM PH R
1N05		V	V		V	OSC XTL SM 14M31818 15P DC R
1P06	V	V				CON V 35P R 1.25 SM 1453230 R
1P07		V	V	V	V	CON H 31P F 1.25 SM FI-WE R
2N01		V	V		V	CER2 0402 Y5V 16V 100N COL
2N02		V	V		V	CER2 0402 Y5V 16V 100N COL
2N03		V	V		V	CER2 0402 X5R 6V3 1U PM20 R
2N04		V	V		V	CER2 0402 X7R 50V 1N COL
2N05		V	V		V	CER2 0402 Y5V 16V 100N COL
2N06		V	V		V	CER2 0402 Y5V 16V 100N COL
2N07		V	V		V	CER2 0402 Y5V 16V 100N COL
2N08		V	V		V	CER2 0402 Y5V 16V 100N COL
2N09		V	V		V	CER2 0402 Y5V 16V 100N COL
2N10		V	V		V	CER2 0402 Y5V 16V 100N COL
2N11		V	V		V	CER1 0402 NP0 50V 100P COL
2N12		V	V		V	CER1 0402 NP0 50V 100P COL
2N13		V	V		V	CER1 0402 NP0 50V 100P COL
2N14		V	V		V	CER1 0402 NP0 50V 100P COL
2N15		V	V		V	CER1 0402 NP0 50V 100P COL
2N16		V	V		V	CER2 0402 NP0 50V 100P COL
2P01		V	V		V	CER2 [illegible] X5R 6V3 2U2 PM10 R
2P02		V	V		V	CER2 [illegible] Y5V 16V 100N COL
2P03		V	V		V	CER2 0402 Y5V 16V 100N COL
2P04		V	V		V	CER2 0402 Y5V 16V 100N COL
2P05		V	V		V	CER2 0402 Y5V 16V 100N COL
2P06		V	V		V	CER2 0402 Y5V 16V 100N COL
2P07		V	V		V	CER2 0402 Y5V 16V 100N COL
2P08		V	V		V	CER2 0402 Y5V 16V 100N COL
2P09		V	V		V	CER2 0402 Y5V 16V 100N COL
2P10		V	V		V	CER2 0402 Y5V 16V 100N COL
2P11		V	V		V	CER2 0402 Y5V 16V 100N COL
2P12		V	V		V	CER2 0402 Y5V 16V 100N COL
2P13		V	V		V	CER2 0402 Y5V 16V 100N COL
2P14		V	V		V	CER2 0402 Y5V 16V 100N COL
2P15		V	V		V	ELCAP SM 16V 10U PM20 COL R
2P16		V	V		V	CER2 0402 Y5V 16V 100N COL
2P17		V	V		V	CER2 0603 X5R 6V3 2U2 PM10 R
2P18		V	V		V	CER2 0603 X5R 6V3 2U2 PM10 R
2P19		V	V		V	CER2 0402 Y5V 16V 100N COL
2P20		V	■		V	CER2 0402 Y5V 16V 100N COL
2P21		V	V		V	CER2 0402 Y5V 16V 100N COL
2P22		V	V		V	CER2 0603 X5R 6V3 2U2 PM10 R
2P23		V	V		V	CER2 0402 Y5V 16V 100N COL
2P24		V	V		V	CER2 0402 Y5V 16V 100N COL
2P25		V	V		V	CER2 0402 Y5V 16V 100N COL
2P26		V	V		V	CER2 0402 Y5V 16V 100N COL
2P27		V	V		V	CER2 0402 Y5V 16V 100N COL
2P28		V	V		V	CER2 0402 Y5V 16V 100N COL
2P29		V	V		V	CER2 0402 Y5V 16V 100N COL
2P30		V	V		V	CER2 0402 Y5V 16V 100N COL
2P31		V	V		V	CER2 0402 Y5V 16V 100N COL
2P32		V	V		V	CER2 0402 Y5V 16V 100N COL
2P33		V	V		V	CER2 0402 Y5V 16V 100N COL
2P34		V	V		V	CER2 0402 Y5V 16V 100N COL
2P35		V	V		V	CER2 0402 Y5V 16V 100N COL
3N01		V	V		V	RST SM 0402 10K PM5 COL
3N02		V	V		V	RST SM 0402 10K PM5 COL
3N03		V	V		V	RST SM 0402 10K PM5 COL
3N04		V	V		V	RST SM 0402 10K PM5 COL
3N05		V	V		V	RST SM 0402 10K PM5 COL
3N06		V	V		V	RST SM 0402 10K PM5 COL
3N07		V	V		V	RST SM 0603 33K PM5 COL
3N08		V	V		V	RST SM 0402 10K PM5 COL
3N09		V	V		V	RST SM 0402 1K PM5 COL
3N10		V	V		V	RST SM 0402 33K PM5 COL
3N11		V	V		V	RST SM 0402 47R PM5 COL
3N12		V	V		V	RST SM 0402 10K PM5 COL
3N13		V	V		V	RST SM 0402 10K PM5 COL
3N14		V	V		V	RST SM 0402 10K PM5 COL
3N15		V	V		V	RST SM 0402 47R PM5 COL
3N16		V	V		V	RST SM 0402 47R PM5 COL

Item	LC4.3 non PIXEL+	LC4.3 with PIXEL+	42PF7320/28	LC4.9/LC4.9 non PIXEL+	LC4.8/LC4.9 with PIXEL+	Description
3N17		V	V		V	RST SM 0402 47R PM5 COL
3N18		V	V		V	RST SM 0402 47R PM5 COL
3N19		V	V		V	RST SM 0402 10K PM5 COL
3N20		V	V		V	RST SM 0402 47R PM5 COL
3N21		V	V		V	RST SM 0402 100R PM5 COL
3N22		V	V		V	RST SM 0402 100R PM5 COL
3N23		V	V		V	RST SM 0402 100R PM5 COL
3N24		V	V		V	RST SM 0402 100R PM5 COL
3N25		V	V		V	RST SM 0402 100R PM5 COL
3N26		V	V		V	RST SM 0402 4K7 PM5 COL
3N27		V	V		V	RST SM 0402 47R PM5 COL
3N28		V	V		V	RST SM 0603 180R PM5 COL
3N29		V	V		V	RST SM 0402 100R PM5 COL
3N30		V	V		V	RST SM 0402 100R PM5 COL
3N31		V	V		V	RST SM 0402 100R PM5 COL
3N32		V	V		V	RST SM 0402 100R PM5 COL
3N33		V	V		V	RST SM 0402 100R PM5 COL
3N34		V	V		V	RST SM 0402 100R PM5 COL
3N35		V	V		V	RST SM 0402 100R PM5 COL
3N46		V	V		V	RST SM 0402 100R PM5 COL
3N47		V	V		V	RST SM 0402 100R PM5 COL
3P01		V	V		V	RST SM 0402 4K7 PM5 COL
3P03		V	V		V	RST SM 0402 47R PM5 COL
3P04				V		RST SM 0402 100R PM5 COL
3P04					V	RST SM 0402 JUMP. 0R05 COL
3P05				V		RST SM 0402 100R PM5 COL
3P05					V	RST SM 0402 JUMP. 0R05 COL
4N01	V			V		RST SM 0402 JUMP. 0R05 COL
4N02	V			V		RST SM 0402 JUMP. 0R05 COL
4N03	V			V		RST SM 0402 JUMP. 0R05 COL
4N04	V			V		RST SM 0402 JUMP. 0R05 COL
4N05	V			V		RST SM 0402 JUMP. 0R05 COL
4N06	V			V		RST SM 0402 JUMP. 0R05 COL
4N07	V			V		RST SM 0402 JUMP. 0R05 COL
4N08	V			V		RST SM 0402 JUMP. 0R05 COL
4N09	V			V		RST SM 0402 JUMP. 0R05 COL
4N10	V			V		RST SM 0402 JUMP. 0R05 COL
4N11	V			V		RST SM 0402 JUMP. 0R05 COL
4N12	V			V		RST SM 0402 JUMP. 0R05 COL
4N13	V			V		RST SM 0402 JUMP. 0R05 COL
4N14	V			V		RST SM 0402 JUMP. 0R05 COL
4N15	V			V		RST SM 0402 JUMP. 0R05 COL
4N16	V			V		RST SM 0402 JUMP. 0R05 COL
4N17	V			V		RST SM 0402 JUMP. 0R05 COL
4N18	V			V		RST SM 0402 JUMP. 0R05 COL
4N19	V			V		RST SM 0402 JUMP. 0R05 COL
4N20	V			V		RST SM 0402 JUMP. 0R05 COL
4N21		■	V		V	RST SM 0402 JUMP. 0R05 COL
4N22		V	V		V	RST SM 0402 JUMP. 0R05 COL
4P01						RST SM 0402 JUMP. 0R05 COL
4P02						RST SM 0402 JUMP. 0R05 COL
4P07				V		RST SM 0402 JUMP. 0R05 COL
5N01		V	V		V	FXDIND 0805 100MHZ 30R COL R
5N02		V	V		V	FXDIND 0805 100MHZ 30R COL R
5N03		V	V		V	FXDIND 0805 100MHZ 30R COL R
5N04		V	V		V	FXDIND 0805 100MHZ 30R COL R
5N05		V	V		V	FXDIND [illegible] 100MHZ 30R COL R
5P01		V	V		V	FXDIND 0805 100MHZ 30R COL R
5P02		V	V		V	FXDIND 0805 100MHZ 30R COL R
5P03		V	V		V	FXDIND 0805 100MHZ 30R COL R
5P04		V	V		V	FXDIND 0805 100MHZ 30R COL R
5P05		V	V		V	FXDIND 0805 100MHZ 30R COL R
5P06		V	V		V	FXDIND 0805 100MHZ 30R COL R
6N01		V	V		V	LED VS SM TLMG3100 (VISH) R
7N01		V	V		V	IC SM EPCS4SI8N (ALTO) R
7N02		V	V		V	IC SM EP1C12F256C8N (ALTO) Y
7N03		V	V		V	TRA SIG SM BC847BS (PHSE) R
7N04		V	V		V	IC SM THC63LVDF84B (THIN) R
7P01		V	V		V	IC SM LF15ABDT (ST00) R
7P02		V	V		V	IC SM THC63LVDM83R (THIN) R

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Layout Small Signal Board (Top Side Overview)

1101	D2
1104	B1
1106	B1
1107	D2
1751	A5
1802	B6
1C00	C5
1N01	A7
1N02	B7
1N03	A7
1N05	A7
2101	C1
2102	C1
2103	C2
2104	D1
2105	D1
2106	C2
2107	C1
2108	C1
2109	D1
2110	C2
2111	C2
2112	C2
2113	C2
2114	C2
2201	A2
2202	A2
2219	B2
2220	B2
2225	A2
2227	A2
2230	A3
2252	B3
2253	B2
2254	B2
2273	A3
2280	A2
2281	A2
2282	B3
2283	B3
2284	B3
2292	B3
2293	B2
2449	C3
2603	A1
2604	A1
2605	A2
2608	A2
2609	A1
2610	A2
2612	A2
2613	A1
2614	A2
2616	A1
2617	A1
2619	A2
2700	A6
2701	A6
2708	A5
2710	A4
2711	A4
2714	A5
2715	A5
2730	A4
2733	A3
2734	A3
2735	A3
2741	B3
2750	A5
2751	A6
2759	A5
2760	A5
2761	A5
2762	A5
2801	B6
2802	B6
2803	B6
2804	B6
2805	B6
2806	B6
2807	B6
2808	C6
2809	C6
2810	C6
2811	C6
2812	C6
2813	B6
2814	B6
2816	C5
2817	C5
2818	C5
2819	C5
2820	C5
2821	C5
2822	C5
2823	C5
2824	C5
2900	B7
2905	B5
2906	B5
2907	B5
2908	B5
2909	B5
2910	B5
2911	B5
2912	B5
2913	B5
2914	C6
2915	C6
2916	C6
2918	C5
2919	C5
2920	C6
2921	C6
2922	C6
2923	B6
2924	B6
2925	B6
2926	B6
2927	B5
2928	B5
2929	B5
2930	C5
2931	C5
2932	C5
2933	■
2935	C5
2936	C5
2937	C5
2938	C5
2939	C5
2941	C6
2942	C5
2945	B6
2946	B6
2947	B6
2948	B6
2949	B6
2950	B6
2951	B6
2952	B6
2953	C5
2954	C5
2955	C5
2956	C5
2957	C5
2958	C5
2959	C5
2A03	C6
2B03	B7
2B04	B7
2B06	B7
2B07	B7
2B08	B7
2B09	B7
2B10	B7
2B11	B7
2B12	B7
2B13	B7
2B14	B7
2B15	B7
2B16	B7
2C00	B5
2C01	B5
2C02	B5
2C03	B5
2D00	C7
2D01	D7
2D02	D7
2D06	C7
2D09	C7
2D10	C7
2D11	C7
2D13	C7
2D14	C7
2D16	C7
2D18	C7
2D19	C7
2D28	C7
2D29	C7
2D30	C7
2D33	C7
2D35	C7
2D36	C7
2D37	C7
2D39	C7
2D40	C7
2D44	C7
2D45	C7
2E24	C5
2E25	C5
2E26	C5
2E27	C5
2E28	C5
2E29	C5
2E30	C5
2E31	C5
2E32	C4
2E36	D4
2E37	C5
2E38	C5
2E39	C5
2G01	D4
2G02	D4
2G03	D3
2G04	D3
2G05	D4
2G06	D4
2G08	D4
2G09	D4
2G10	D3
2G12	D3
2G16	D2
2G17	D2
2G18	D6
2G19	D5
2G21	D5
2G22	D5
2G23	D5
2G25	D5
2G26	D5
2G28	D4
2G45	D4
2G46	D4
2G48	D6
2G49	D5
2G50	D6
2G51	D6
2G52	D2
2G53	D5
2K00	A1
2K01	A1
2K02	B1
2K03	B1
2K04	B1
2K05	B1
2K06	B1
2K07	B1
2K08	B1
2K10	B1
2K11	B1
2K12	B1
2K13	B1
2K14	■
2K15	B1
2K16	C1
2K17	C1
2K18	C1
2K19	B1
2K20	B1
2K21	A1
2K22	A1
2K23	A1
2K24	A1
2K25	A1
2K26	A1
2K27	A1
2K28	A1
2L07	B4
2L08	B4
2L09	B4
2L10	B3
2L11	B4
2L13	B3
2L15	B3
2L17	B3
2L18	B3
2L19	B4
2L23	B4
2L24	B4
2L26	B3
2L33	B4
2L34	B4
2L35	B3
2L36	B3
2L37	B3
2L38	B3
2L39	B3
2M24	C3
2M25	C4
2M26	C3
2M65	B4
2M67	B3
2N01	A6
2N02	A6
2N03	A6
2N04	A6
2N05	A6
2N06	A6
2N07	B6
2N08	B6
2N09	B6
2N10	A7
2N11	A7
2N12	A7
2N13	A7
2N14	A7
2N15	A7
2N16	A6
2N17	A7
2N18	A7
2N19	A7
2N20	A7
2P01	A6
2P02	A6
2P03	A6
2P04	A6
2P05	A6
2P06	A6
2P07	A6
2P08	A6
2P09	A6
2P10	A6
2P11	A6
2P12	A6
2P13	A6
2P14	A6
2P16	A6
2P17	A6
2P18	A6
2P19	A6
2P20	A6
2P21	A6
2P22	A6
2P23	A6
2P24	A6
2P25	A6
2P26	A6
2P27	A6
2P28	A6
2P29	A6
2P30	A6
2P31	A7
2P32	A7
2P33	A7
2P34	A7
2P35	A7
3101	D1
3102	D1
3103	D2
3104	D2
3105	C1
3106	D2
3107	C2
3108	C2
3109	C2
3110	C2
3111	C2
3112	C2
3113	C2
3114	C2
3115	C1
3116	C2
3117	C2
3118	C2
3119	C2
3120	D2
3121	D2
3122	D2
3123	D2
3124	■
3125	D1
3201	A2
3202	A2
3203	A2
3204	A2
3205	A2
3206	A2
3208	B3
3209	B3
3210	B3
3211	B3
3212	B2
3213	B2
3218	B2
3219	B2
3220	B2
3228	B3
3229	A2
3232	A2
3233	A2
3237	A2
3238	A2
3239	A2
3240	A2
3241	A2
3243	A2
3246	A2
3247	A2
3248	A2
3249	A2
3250	A3
3251	A3
3252	A3
3253	A3
3254	A2
3255	B3
3256	A3
3257	A3
3258	B3
3259	A3
3260	A3
3275	A2
3276	A2
3283	B2
3284	B2
3287	B3
3288	B3
3289	B3
3290	B2
3296	A2
3431	A1
3432	A1
3451	B3
3453	B3
3454	B3
3455	B3
3456	B3
3458	B3
3459	B3
3461	C3
3462	C3
3463	B3
3604	A1
3605	A1
3609	A1
3610	A2
3611	A2
3612	A2
3615	B1
3616	A2
3617	A1
3618	A1
3619	A1
3620	A1
3621	A1
3623	A1
3625	B1
3626	B1
3627	B1
3628	A1
3629	A1
3630	A2
3631	A1
3632	A1
3633	A2
3708	A5
3709	A5
3712	A4
3713	A4
3716	A5
3732	A3
3733	A3
3735	A3
3736	A3
3740	B3
3741	B3
3742	B3
3743	B3
3750	A5
3755	A5
3758	A6
3759	A5
3760	A5
3761	A5
3800	B5
3817	B5
3818	B5
3820	C6
3822	C6
3823	C6
3824	C5
3825	B5
3826	B5
3827	B5
3828	B5
3829	B5
3830	B5
3831	B5
3832	B5
3833	■
3834	B5
3835	B5
3836	B5
3837	B5
3838	B6
3839	C6
3840	C6
3841	B6
3900	B6
3901	B5
3902	B5
3903	B5
3904	B5
3A02	C6
3A03	C6
3A04	C6
3A05	C6
3A06	C6
3C00	B5
3C01	B5
3C02	C5
3C03	C5
3C04	B5
3C05	B4
3C06	B4
3C07	B4
3C08	B4
3C09	B4
3C10	B4
3C11	B4
3C12	B5
3C13	B5
3C14	B5
3C15	B4
3C16	B5
3C17	B4
3C18	B4
3C19	B4
3C20	B5
3C21	B5
3D00	C7
3D01	C7
3D02	C7
3D03	D7
3D04	D7
3D11	C7
3D19	C7
3D21	C7
3D22	C6
3D23	C7
3D24	C7
3D25	C7
3D26	C7
3D27	C7
3D30	C7
3D31	C7
3D32	C7
3D33	C7
3D34	C7
3D35	C7
3E01	D4
3E02	C4
3E24	C5
3E25	C5
3E26	C5
3E27	C5
3E28	C5
3E29	C5
3E30	C5
3E31	C5
3E32	C5
3E33	C5
3E34	C5
3E35	C5
3E36	C5
3E37	C4
3E38	C5
3E39	C5
3E41	D5
3E42	C5
3E43	C4
3E44	C5
3E45	C5
3E46	C4
3E49	C4
3E51	D4
3E64	D4
3G00	D4
3G01	D4
3G02	D4
3G03	D4
3G04	D3
3G05	D3
3G06	D3
3G07	D3
3G08	D5
3G09	D5
3G12	D3
3G13	D3
3G14	D3
3G15	D3
3G16	D3
3G17	D3
3G26	D3
3G27	D3
3G28	D3
3G29	D3
3G30	D3
3G31	D2
3G32	D2
3G33	D2
3G34	D2
3G37	D6
3G38	D5
3G39	D6
3G40	D5
3G41	D6
3G42	D5
3G43	D6
3G44	D5
3G45	D5
3G46	D5
3G47	D5
3G48	D5
3G51	D5
3G52	D5
3G53	D5
3G54	D5
3G55	D5
3G56	D5
3G57	D5
3G58	D4
3G59	D4
3G60	D4
3K00	B1
3K01	B1
3K02	B1
3K03	B1
3K05	B1
3K06	B1
3K07	B1
3K08	B1
3K09	C1
3K11	A1
3K12	A1
3K13	A1
3L00	B3
3L01	B3
3L03	B3
3L04	B3
3L05	B3
3L06	B3
3L08	B3
3L10	B3
3L11	B3
3L12	B3
3L13	B3
3L15	B3
3L16	B3
3L17	B3
3L18	■
3L19	■
3L20	B3
3L21	B4
3L22	B4
3L23	B3
3L24	B4
3L25	B4
3L26	B4
3L27	B4
3L28	B4
3L30	B3
3L31	B3
3L32	B3
3L33	B3
3L34	B3
3L35	B3
3L36	■
3L37	■
3L38	B3
3L39	B3
3M00	B4
3M01	C4
3M02	C4
3M03	C4
3M04	C4
3M06	C3
3M07	C3
3M08	C3
3M09	C3
3M10	C4
3M11	C4
3M14	B4
3M15	C4
3M27	B3
3M29	C3
3M50	C4
3M51	C4
3M52	C4
3M53	C4
3M54	C4
3M55	C4
3M56	C4
3M57	C4
3M58	C4
3M59	C4
3M78	C4
3M79	B4
3M86	B4
3M87	B4
3N01	A6
3N02	A6
3N03	A6
3N04	A6
3N05	A6
3N06	A6
3N07	A6
3N08	A6
3N09	A6
3N10	A6
3N11	A6
3N12	A6
3N13	A6
3N14	A6
3N15	A7
3N16	A7
3N17	A7
3N18	A7
3N19	A6
3N20	A6
3N26	B6
3N27	A6
3N28	A7
3N29	A6
3N30	A7
3N31	A7
3N32	A7
3N33	A7
3N34	A7
3N35	A7
3N42	A7
3N43	A7
3N44	A7
3N45	A7
3N46	B7
3N47	B7
3P01	A6
3P03	A6
3S01	D4
4102	C2
4103	C2
4104	C2
4105	C2
4106	C2
4109	C2
4110	C2
4111	C2
4112	C2
4113	C2
4114	C2
4115	C2
4116	C2
4204	C3
4207	B3
4208	A3
4209	A3
4211	A2
4212	A2
4436	B3
4437	B3
4438	■
4439	B3
4440	■
4441	C3
4501	A2
4502	A2
4503	A2
4504	A2
4505	A2
4506	A2
4601	A1
4602	A1
4603	A2
4604	A1
4605	A2
4606	■
4609	A1
4610	A2
4611	A1
4612	A1
4613	B1
4614	A1
4615	A1
4618	A1
4619	A1
4801	C6
4A02	C6
4A03	C6
4D00	C7
4D01	C7
4E03	D5
4E10	C5
4E11	C5
4G00	D4
4G01	D3
4G05	D6
4G06	D5
4G19	D4
4G26	D2
4K01	A1
4K02	C1
4K03	A1
4K04	A1
4K05	A1
4K06	■
4K07	■
4L00	B4
4L01	B4
4L02	B3
4L03	■
4L04	B3
4L05	B3
4M00	C4
4M01	C4
4M02	C4
4M03	C4
4M05	C4
4M06	C4
4M08	C4
4M09	C4
4M10	C4
4N21	B6
4N22	B6
4P09	A6
4P10	A6
5101	C2
5102	C2
5103	C2
5105	B2
5106	B2
5107	D1
5108	D1
5211	A3
5214	A2
5218	A3
5700	A6
5704	A5
5709	A4
5713	A5
5730	A4
5733	A4
5735	A3
5738	A3
5755	A5
5756	A5
5757	A5
5758	A5
5759	A5
5901	C5
5902	C6
5903	B5
5904	C5
5905	B6
5906	B6
5907	B6
5908	B7
5909	C5
5910	C5
5911	C6
5C00	B5
5E03	C5
5G00	D2
5K00	A1
5K01	B1
5K02	A1
5L03	B3
5L04	B3
5M00	B4
5M01	C3
5M03	B4
5M04	B3
5N01	A7
5N02	A6
5N03	B6
5N04	B6
5N05	A7
5P01	A6
5P02	A6
5P03	A6
5P04	A7
5P05	A7
5P06	A7
6101	D1
6102	D1
6103	D2
6104	C2
6105	C2
6106	D2
6107	D2
6204	A2
6205	A2
6206	A2
6430	A1
6431	A1
6601	A1
6709	A4
6712	A4
6733	A4
6740	B3
6E00	C5
6E01	C5
6E02	C5
6E03	C5
6G00	D2
6G01	D5
6G07	D5
6G08	D5
6G09	D6
6G10	D6
6N01	A7
7101	C2
7102	C2
7103	C2
7201	A2
7202	A2
7203	A2
7204	A2
7205	A2
7207	A2
7208	B3
7209	A3
7210	A3
7211	A2
7217	B2
7430	A1
7436	C3
7601	A1
7602	A1
7603	A2
7604	A1
7605	A1
7606	A1
7607	B1
7708	A5
7710	A4
7730	A4
7735	A3
7738	A3
7741	B3
7742	B3
7753	A5
7754	A5
7755	A6
7756	A5
7758	A5
7900	B7
7A01	C6
7C01	B5
7C02	C5
7D00	C7
7D04	C7
7D05	C7
7E03	C5
7E04	C5
7E05	C5
7G03	D3
7G05	D5
7L01	B3
7L02	B3
7L03	B3
7L04	B4
7L06	C3
7L07	C3
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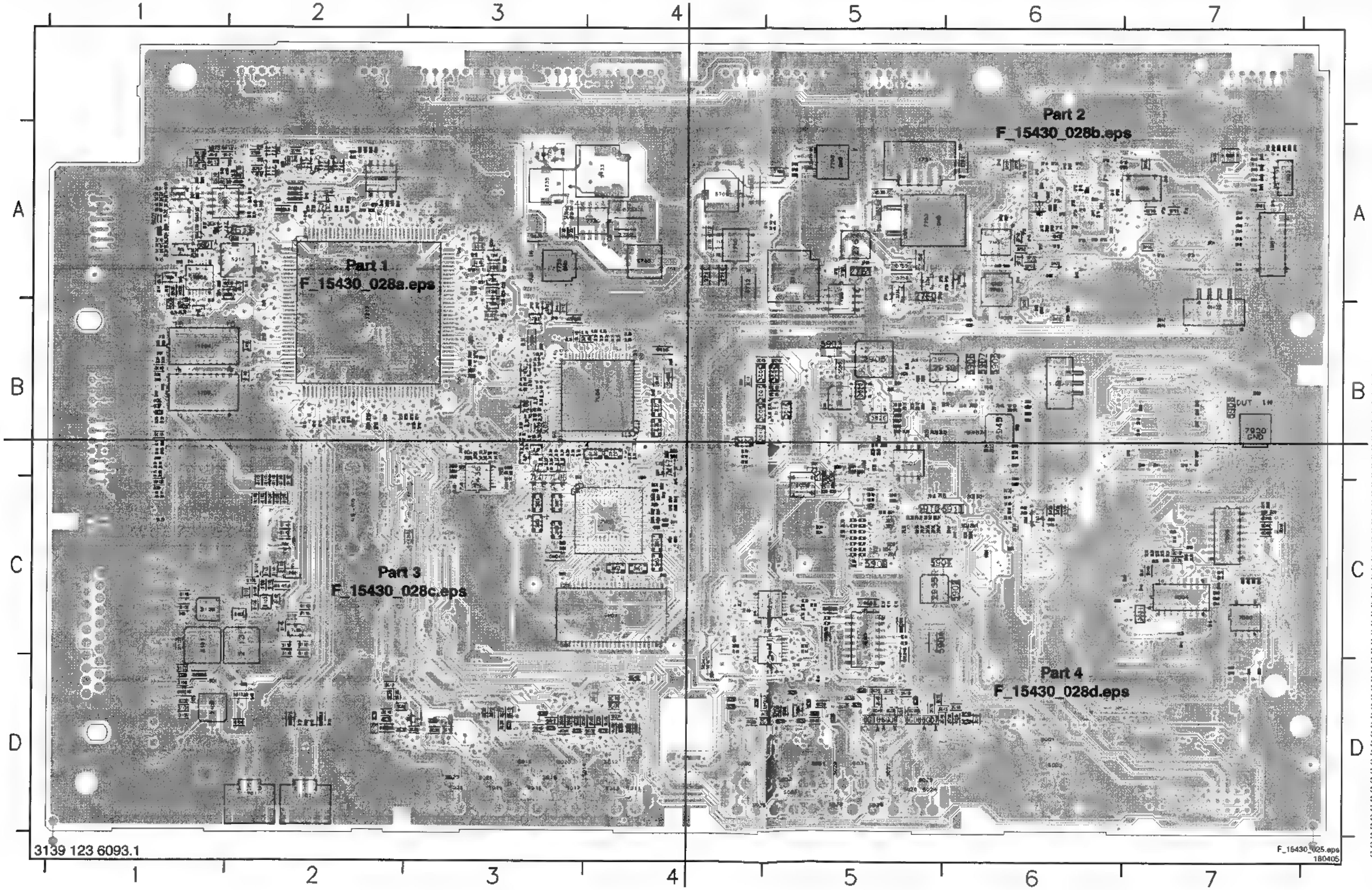
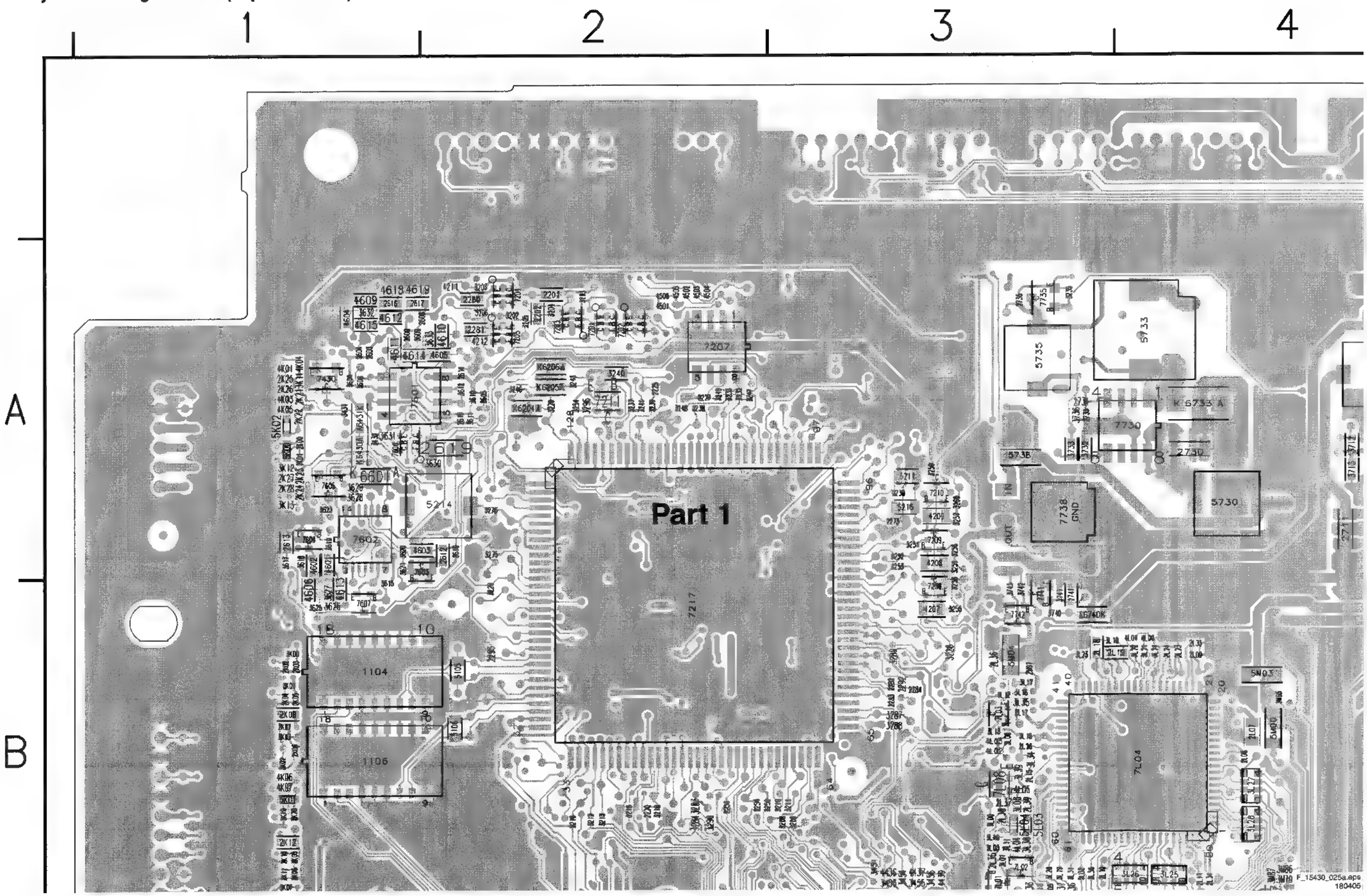
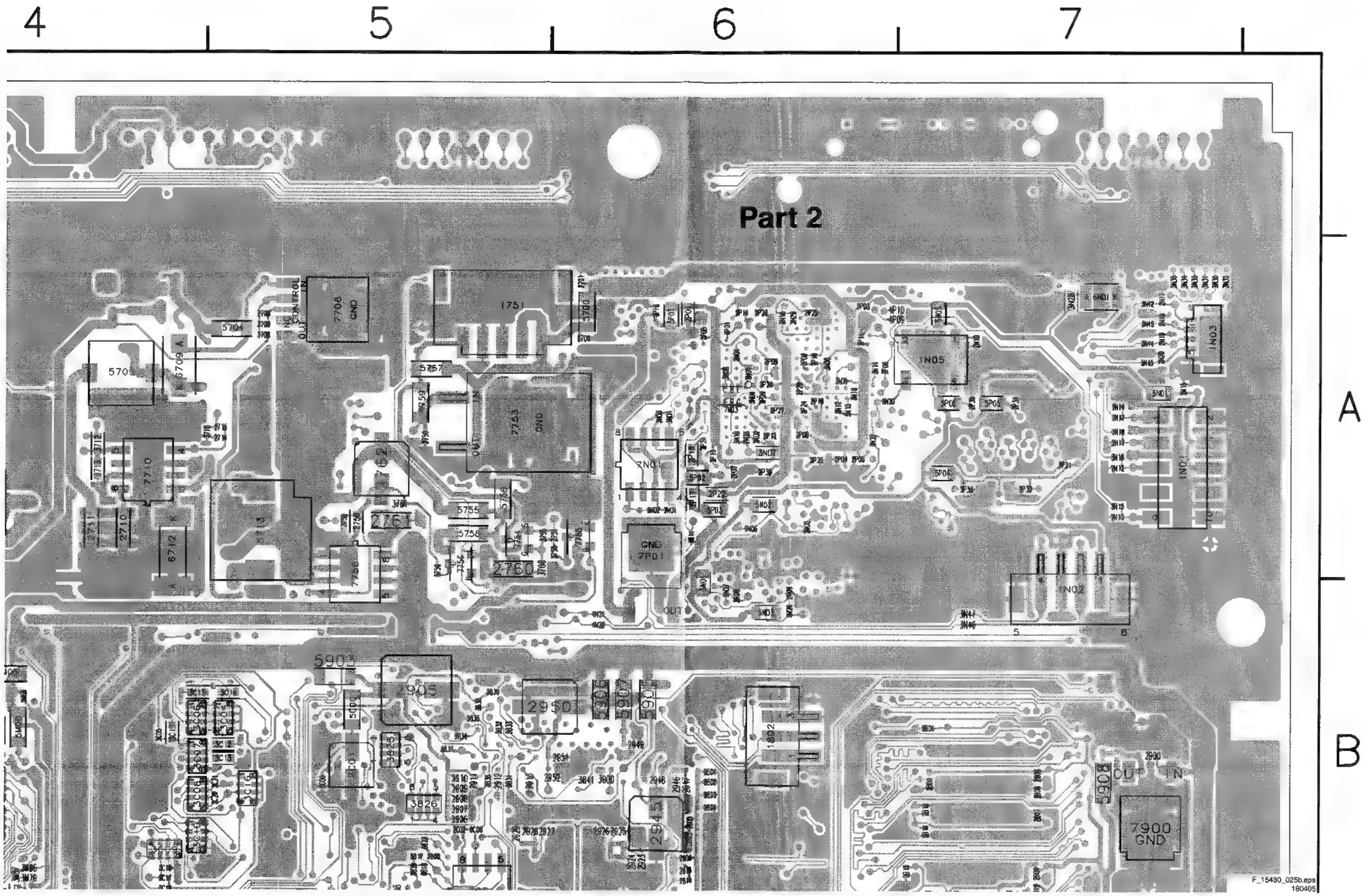


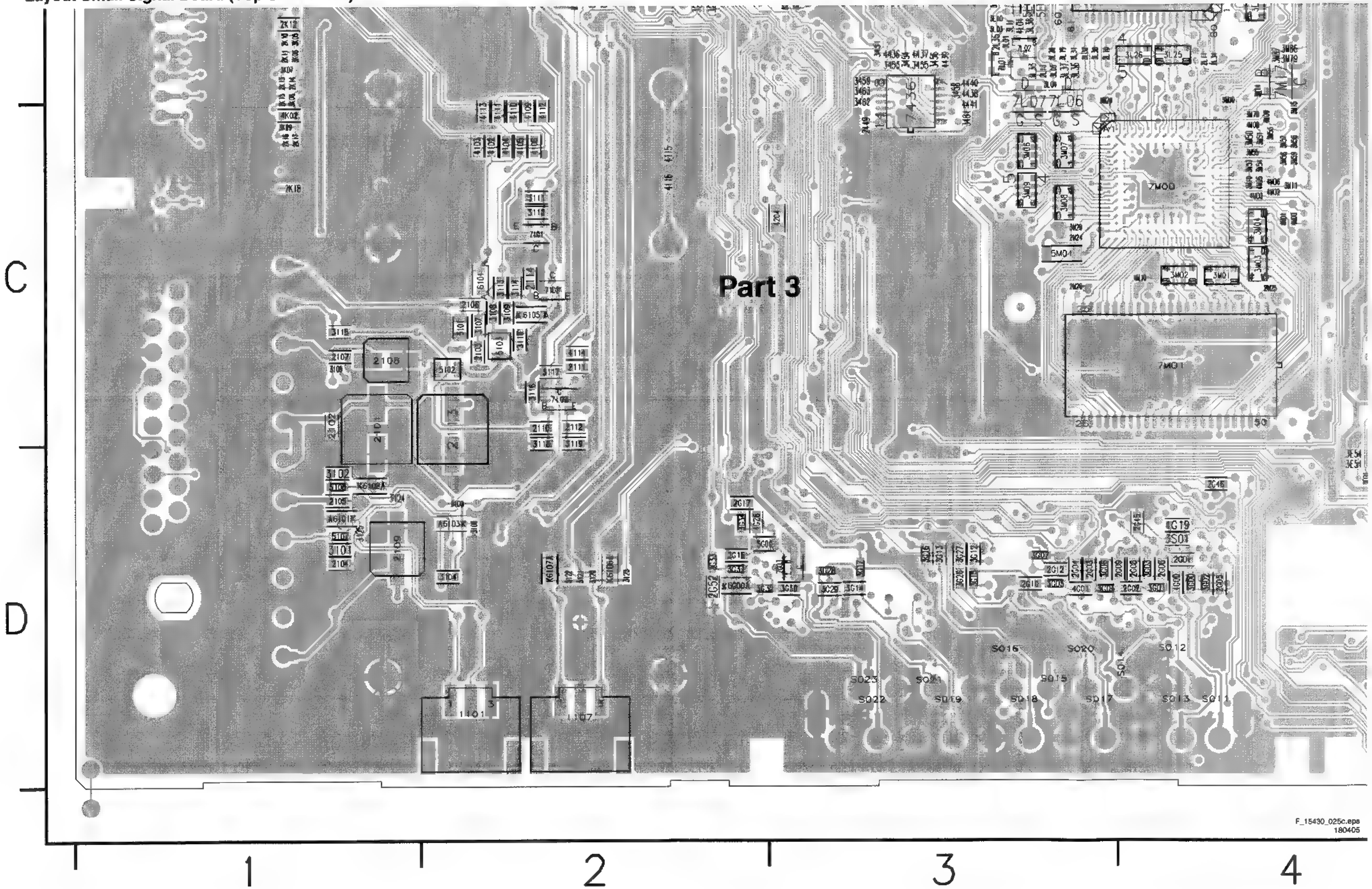
Layout Small Signal Board (Top Side Part 1)



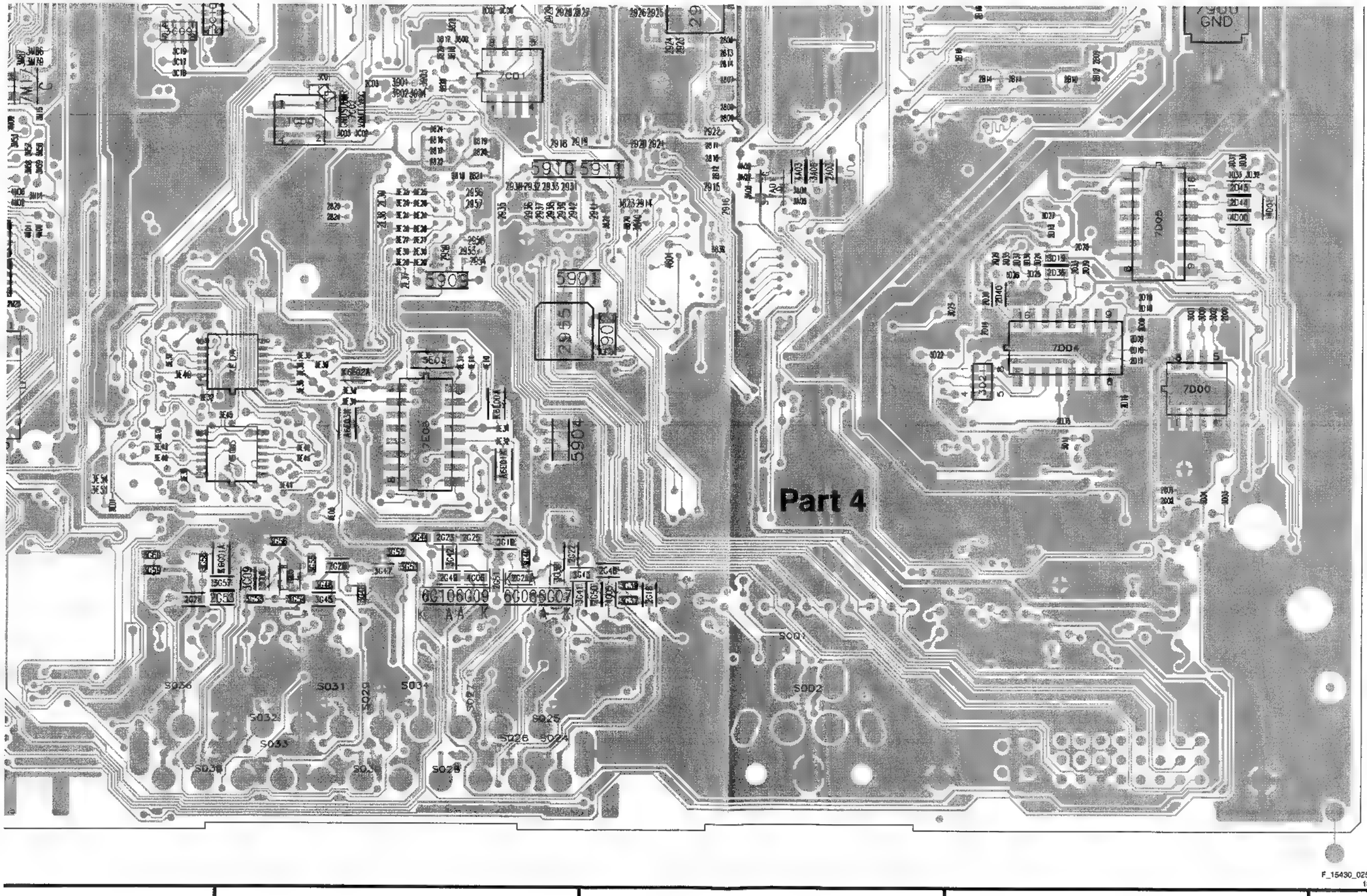
Layout Small Signal Board (Top Side Part 2)



Layout Small Signal Board (Top Side Part 3)



Layout Small Signal Board (Top Side Part 4)



Layout Small Signal Board (Bottom Side Overview)

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1201 B6 1J03 A6 1P03 A1 2214 B6 2234 A6 2248 B6 2265 B6 2279 B5 2505 A6 2731 A4 2815 C3 2B01 B1 2D20 D1 2E00 D3 2E13 C3 2E35 C4 2F15 D2 2G36 D5 2G66 D3 2J14 A3 2J29 A6 2L21 B4 2M05 C4 2M18 C4 2M56 C4 2P42 A1 3224 A5 3263 B6 3279 B5 3734 A3 3809 B2 3A10 B4 3D12 C1 3N24 B2 5217 B6
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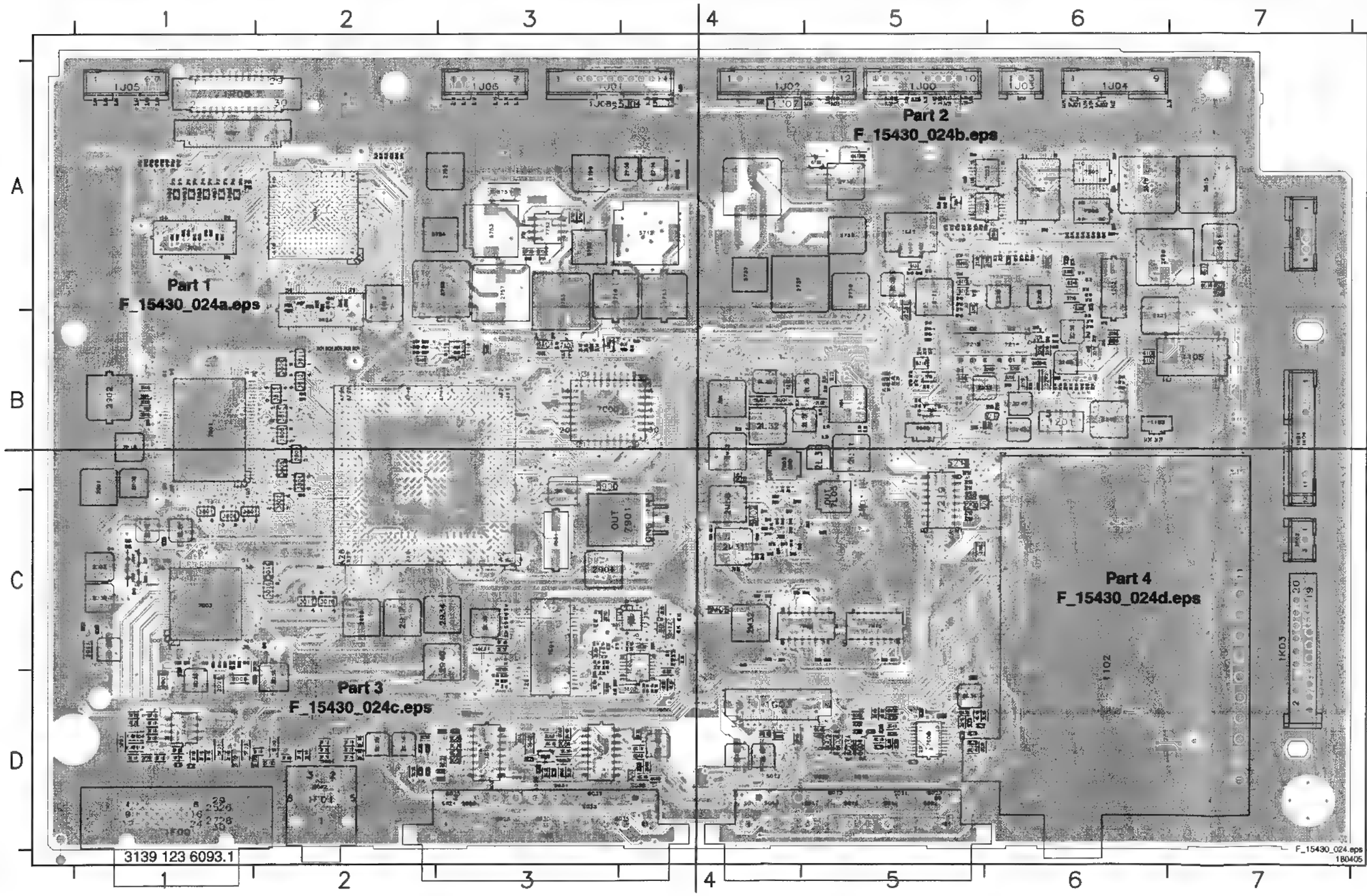

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3E13 D3 4201 B5 5D03 D2
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3E15 C3 4203 B5 5E00 D4
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3E17 C3 4206 C5 5E02 C4
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3F19 D1 4A01 B3 6708 A4
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3F21 D1 4A05 ■ 6738 A5
3F22 D1 4A06 B3 6751 A3
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3G87 D5 4N11 A2 7E00 C4
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3G91 D4 4N15 A2 7G07 D3
3G92 D3 4N16 A1 7G08 D3
3G93 D3 4N17 A2 7G09 D5
3G94 D3 4N18 A1 7G10 D3
3G95 D3 4N19 A2 7L05 C5
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3G99 D2 4P01 A1 7M14 C5
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3L09 B5 4P07 A1
3M12 C4 4P08 A1
3M13 C4 5201 B6
3M16 C4 5202 B5
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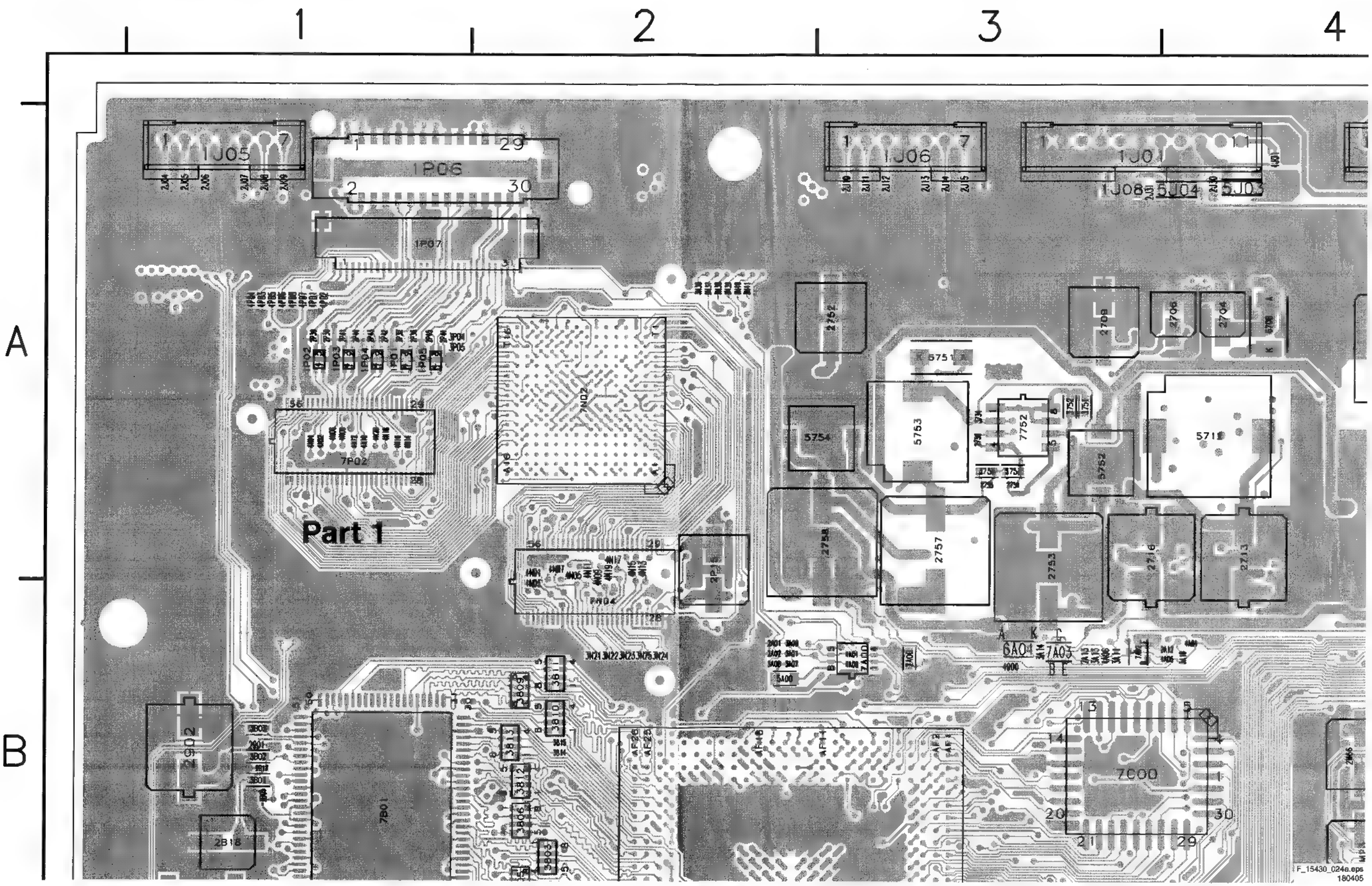
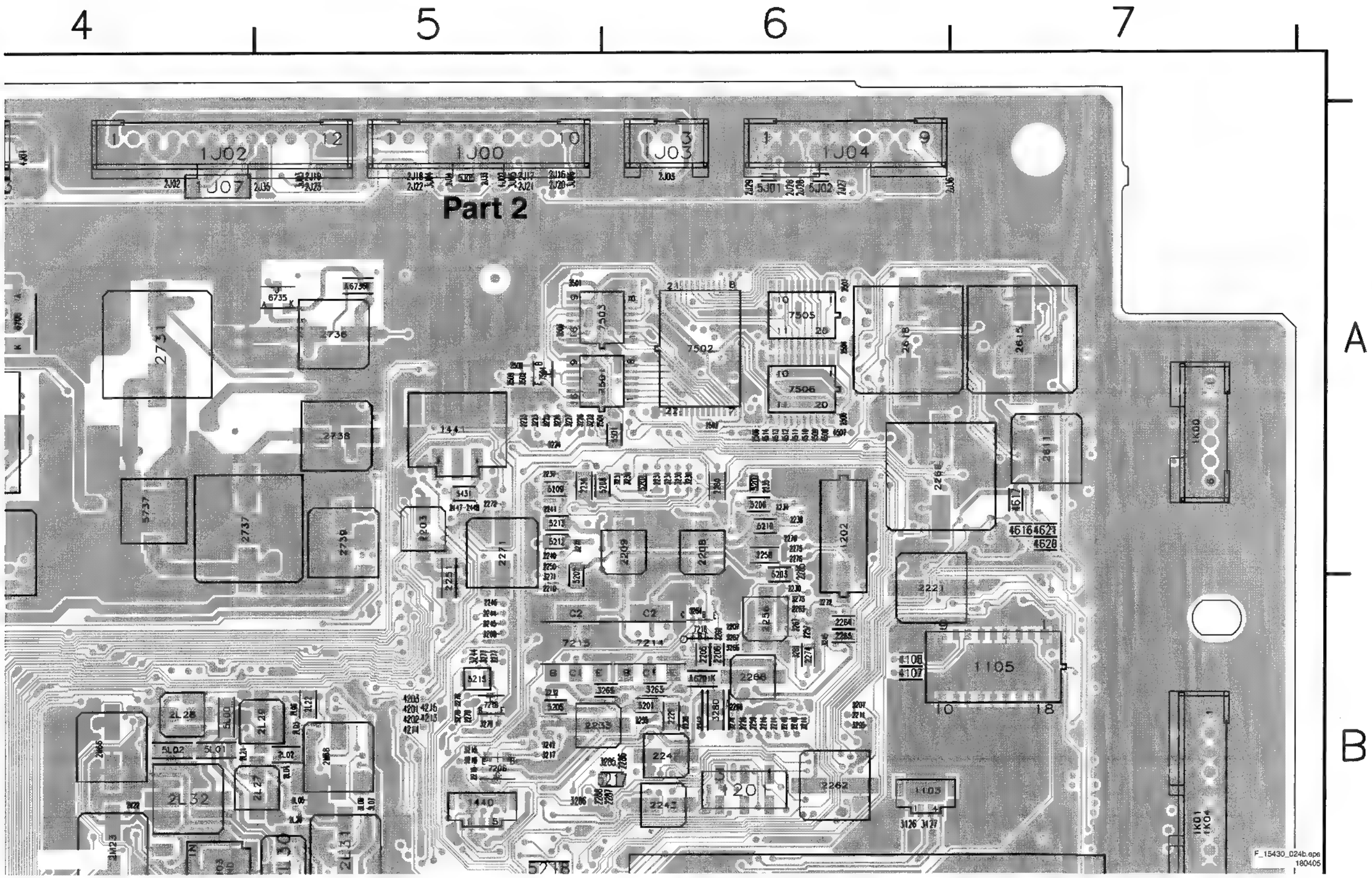
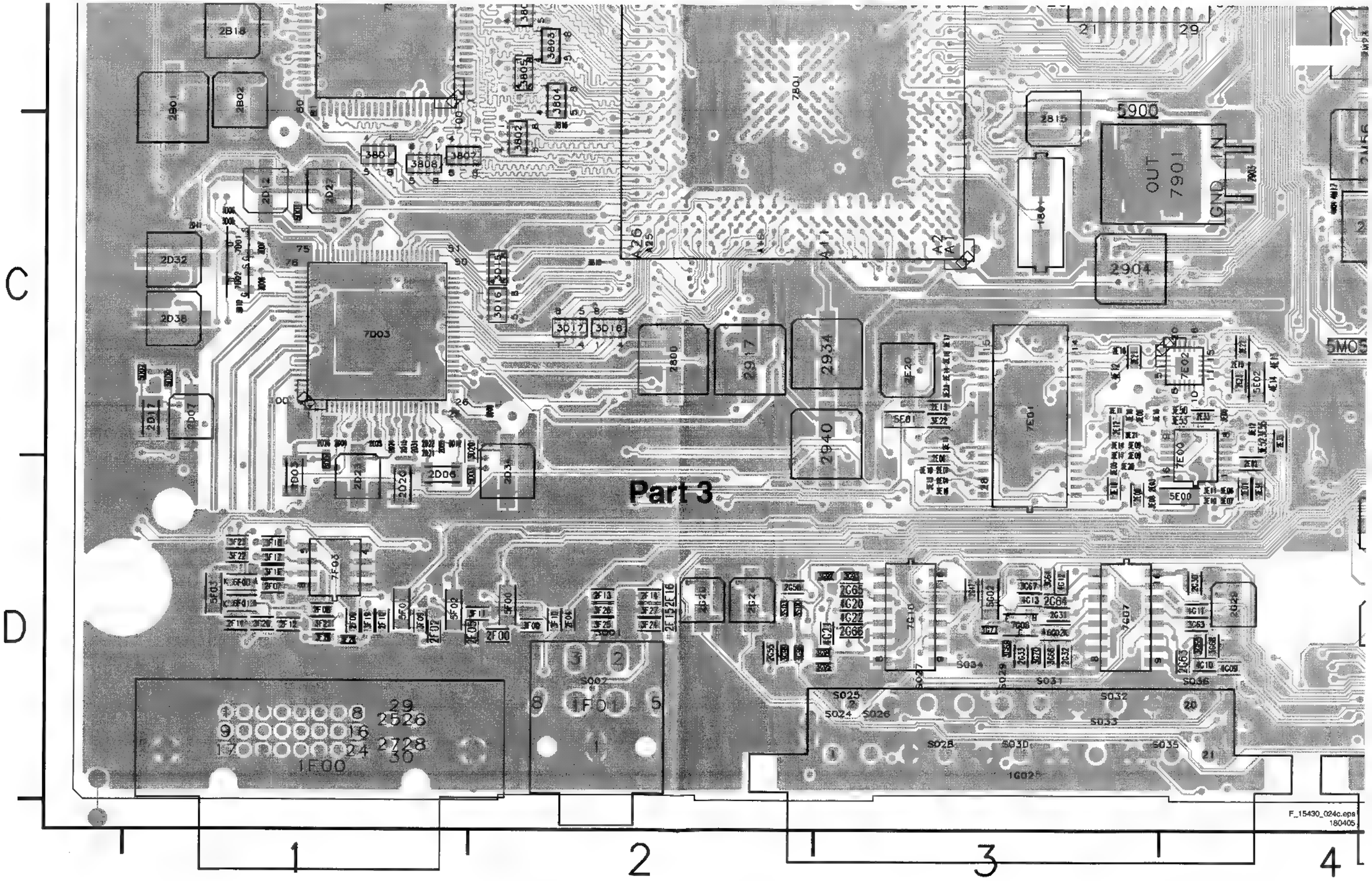
Layout Small Signal Board (Bottom Side Part 1)



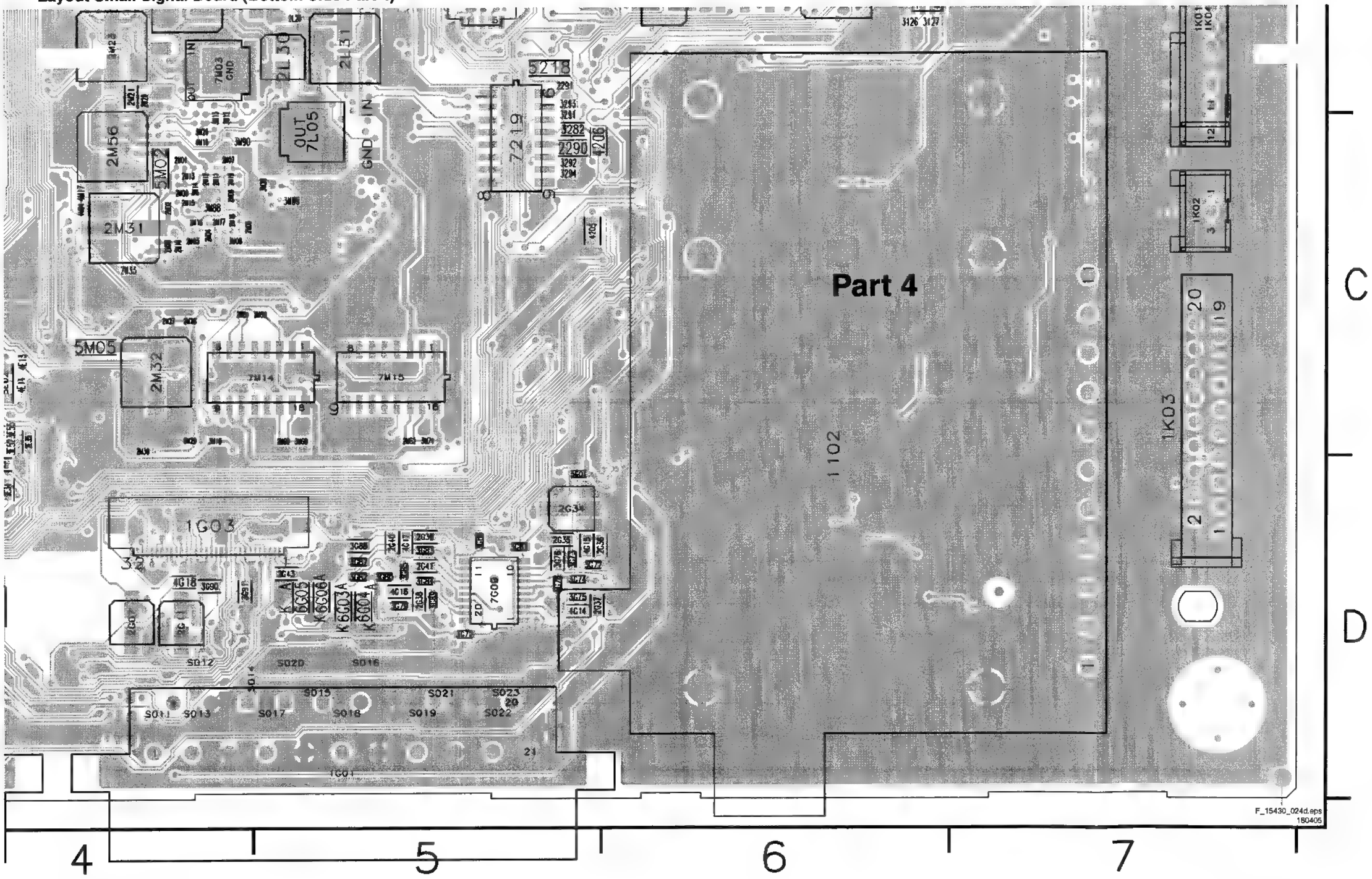
Layout Small Signal Board (Bottom Side Part 2)



Layout Small Signal Board (Bottom Side Part 3)



Layout Small Signal Board (Bottom Side Part 4)



PDP Audio Amplifier Panel

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1735 C12	2706 A3	2718 B5	2731 C9	2746 C7	2759 G11	2773 G3	2791 D14	3704 A10	3716 C10	3728 D4	3740 F15	3752 H14	3764 A10	3776 H9	5714 H8	7707 D2	7718-2 G4	9708 H7	1710 E13	1722 H6	1736 A14	1701 H13	1713 C2	1725 C8	1737 D2	1749 G1	1761 H4	1773 H10
1736 A13	2707 C5	2719 A4	2732 C10	2747 C2	2760 G6	2774 G3	2793 H1	3705 A5	3717 C5	3729 D2	3741 G10	3753 H11	3765 D10	3777 D9	6700 D13	7708 E5	7719-1 H6	9709 G14	1711 E14	1723 H6	1740 A12	1702 G11	1714 C2	1726 B10	1738 D3	1750 G3	1762 H9	1774 G10
1738 G13	2708 F9	2720 B5	2733 G9	2748 C2	2761 G1	2775 H5	2794 H3	3706 A4	3718 C2	3730 D1	3742 G14	3754 G4	3766 H10	3778 D10	6702 D5	7709 E5	7719-2 H6	9700 A12	1712 E13	1724 H6	1741 A12	1703 A2	1715 A8	1727 D10	1739 D4	1751 G14	1763 H5	1775 C9
1M02 A13	2709 A8	2721 B6	2736 D10	2749 C3	2762 G2	2776 A6	2795 H3	3707 A8	3719 C2	3731 D3	3743 G5	3755 H5	3767 H9	3999 A15	6705 E8	7710 E4	7720 H16	1701 A12	1713 D15	1725 G7	1742 A13	1704 A3	1716 A10	1728 G9	1740 E4	1752 G5	1764 H3	1776 B10
1M08 A14	2710 A7	2722 B4	2737 D10	2750 G9	2763 H5	2777 B5	2796 H3	3708 A10	3720 D10	3732 E4	3744 G5	3756 H5	3768 G10	5700 A10	6704 G13	7711 F5	9700 E12	1702 A11	1714 F13	1726 A7	1743 B13	1705 A3	1717 D2	1729 D13	1741 G11	1753 G5	1765 H15	1777 A11
1M52 E14	2711 A2	2723 B8	2738 D6	2751 F4	2764 E8	2778 E8	2797 H4	3709 A3	3721 C3	3733 E5	3745 G11	3757 G3	3769 H8	5701 D14	6705 H13	7712 G6	9701 E12	1703 B13	1715 F13	1727 A5	1744 C7	1706 A4	1718 A8	1730 D3	1742 E3	1754 G5	1766 G1	
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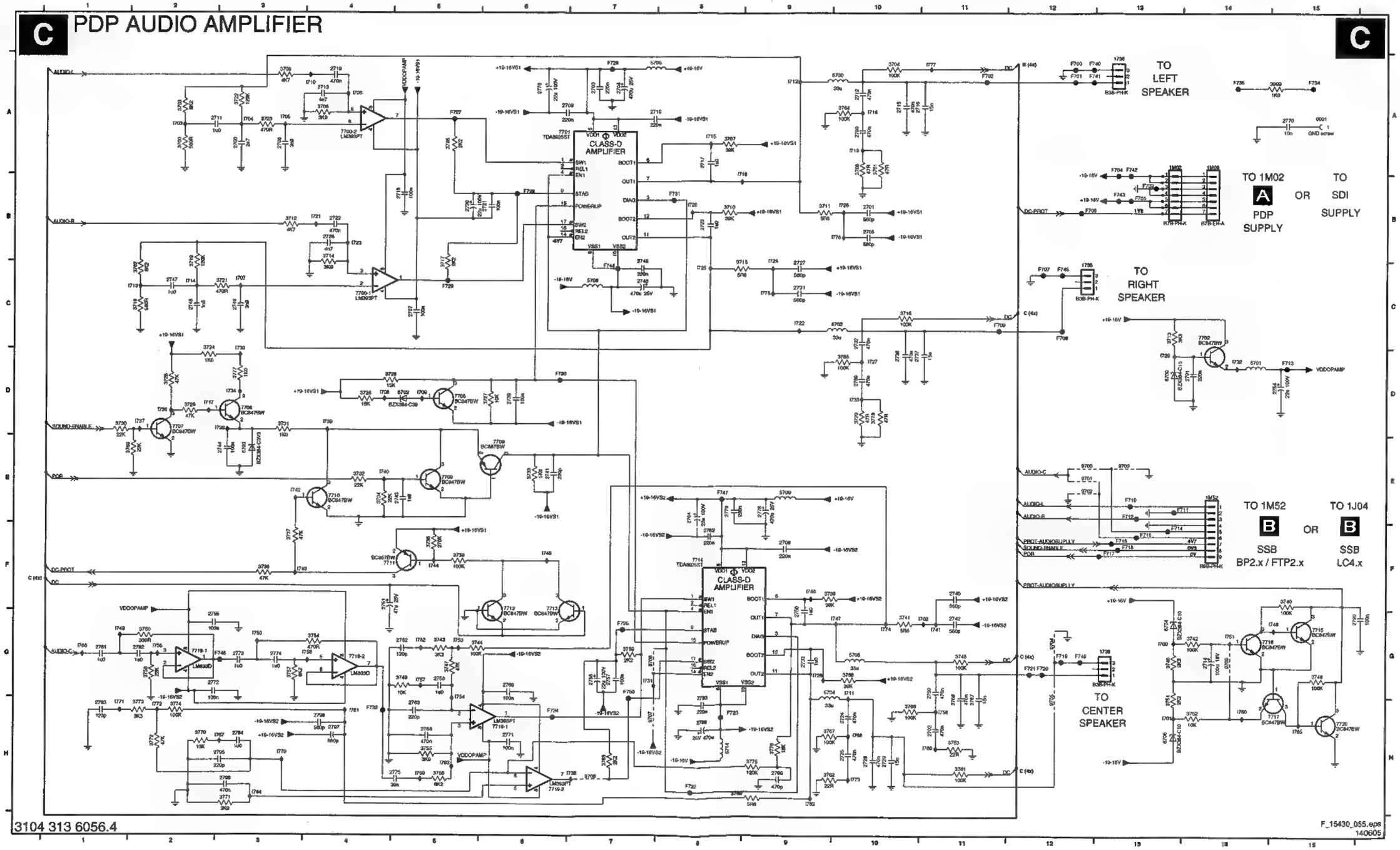
C PDP AUDIO AMPLIFIER



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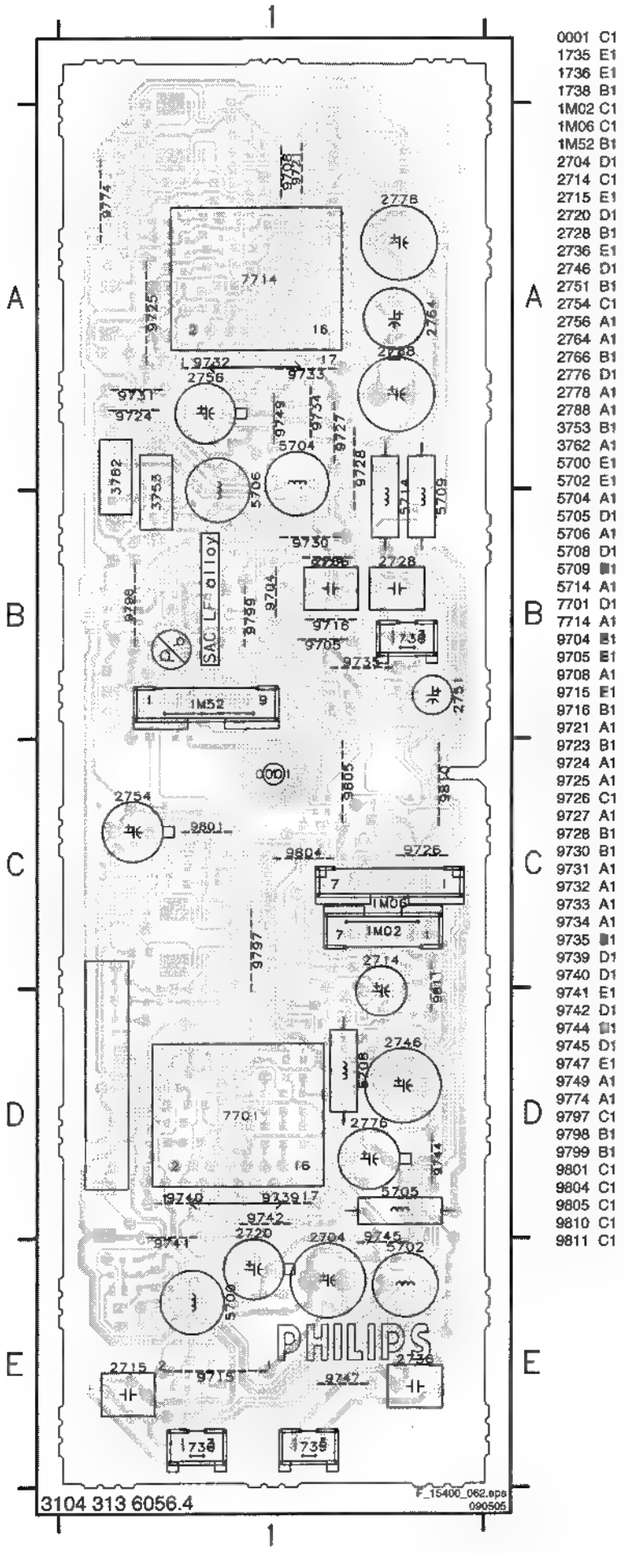
Layout PDP Audio Amplifier Panel (Top Side)



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1M06 C1
1M52 B1
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2720 D1
2728 B1
2736 E1
2746 D1
2751 B1
2754 C1
2756 A1
2764 A1
2766 B1
2776 D1
2778 A1
2788 A1
3753 B1
3762 A1
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5705 D1
5706 A1
5708 D1
5709 ■1
5714 A1
7701 D1
7714 A1
9704 ■1
9705 E1
9708 A1
9715 E1
9716 B1
9721 A1
9723 B1
9724 A1
9725 A1
9726 C1
9727 A1
9728 B1
9730 B1
9731 A1
9732 A1
9733 A1
9734 A1
9735 ■1
9739 D1
9740 D1
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9744 ■1
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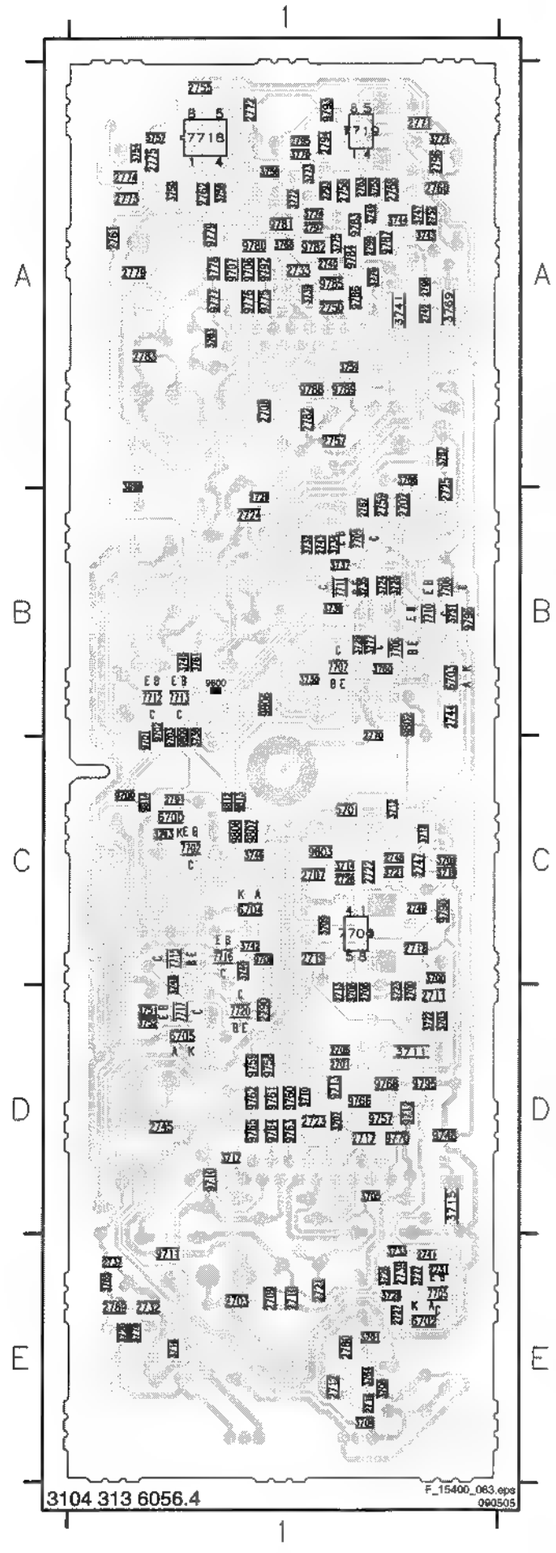
Layout PDP Audio Amplifier Panel (Bottom Side)



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2707 C1
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2709 E1
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2712 E1
2713 D1
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2717 D1
2718 C1
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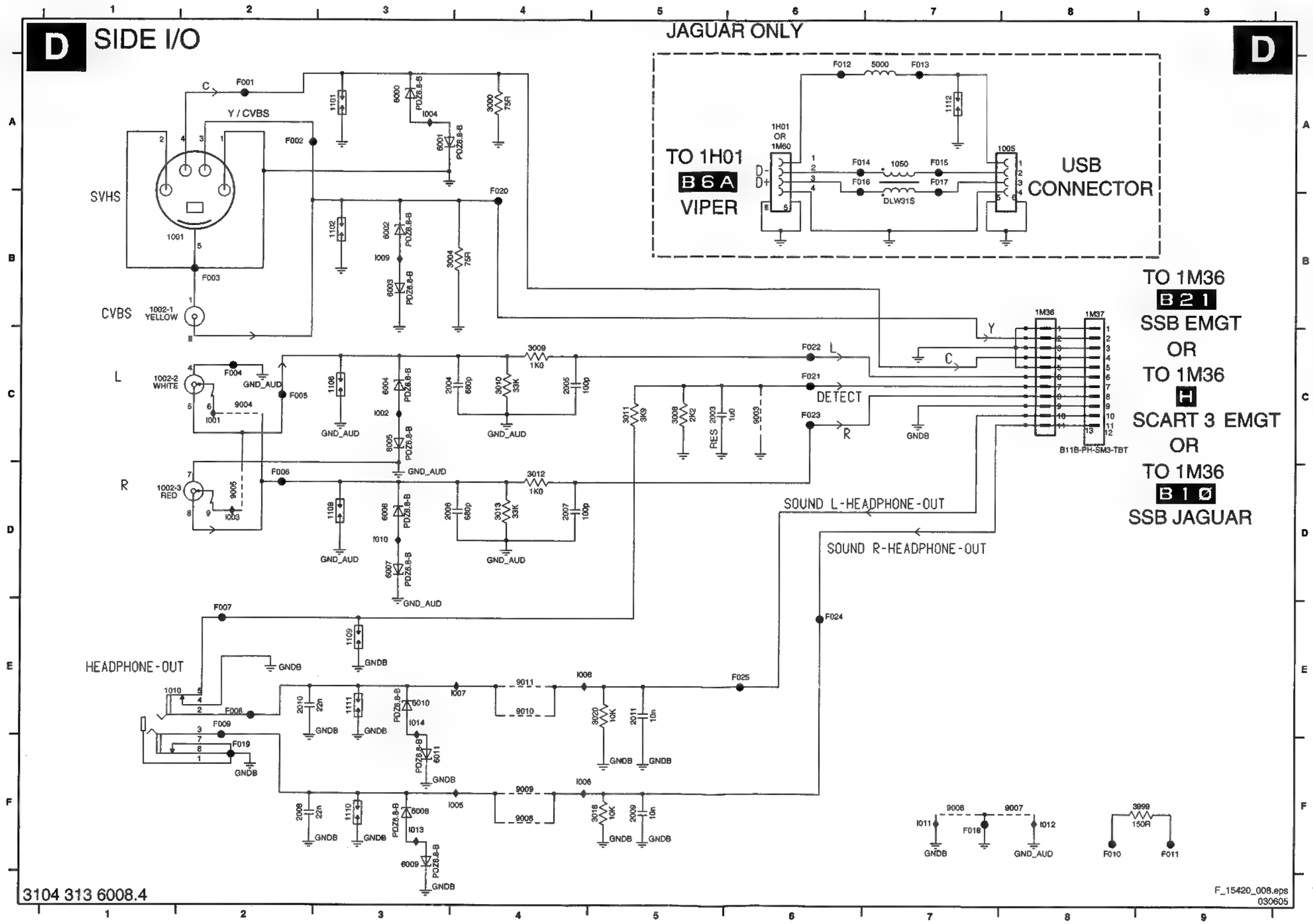
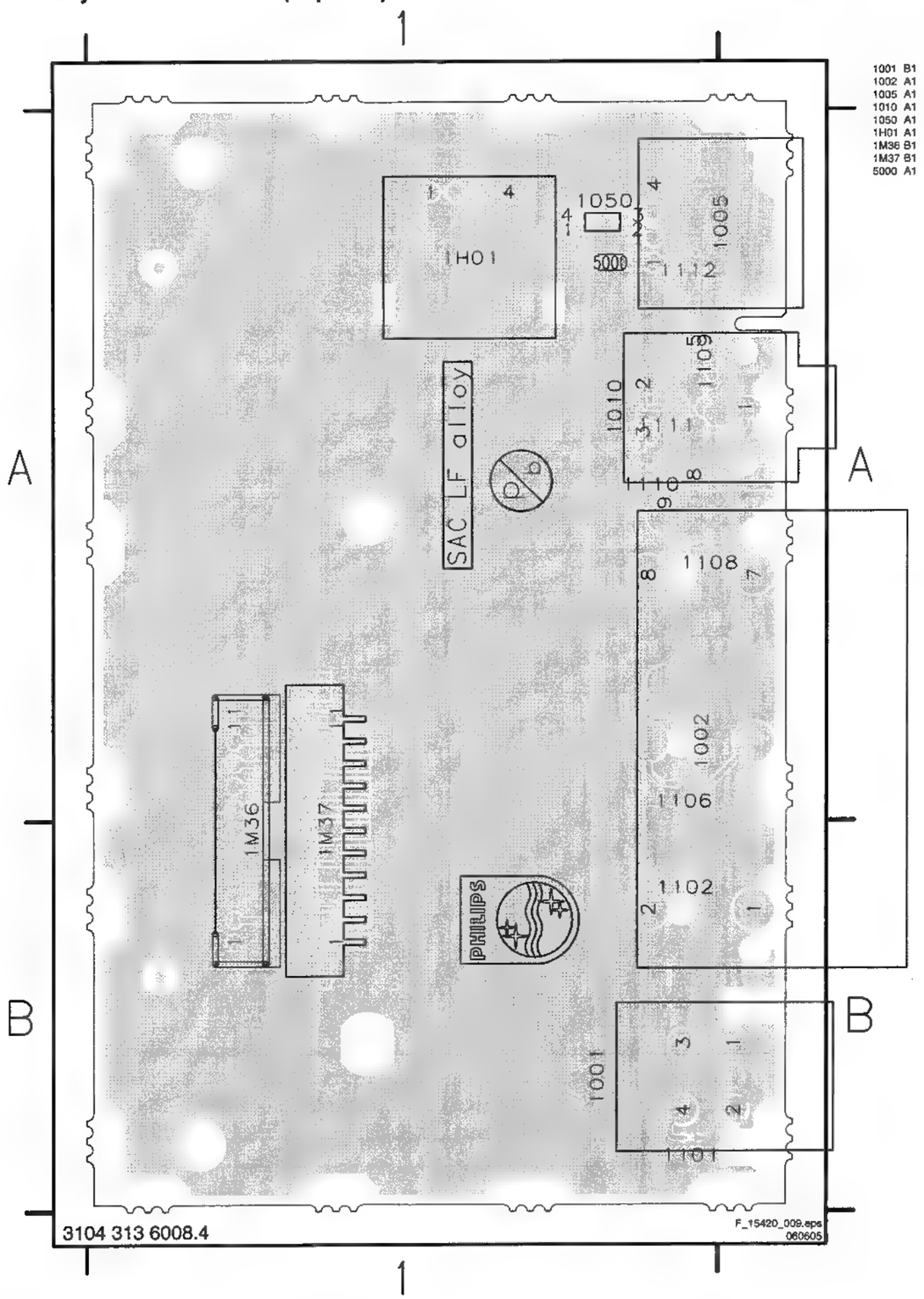
3702 C1
3703 D1
3704 E1
3705 D1
3706 D1
3707 D1
3708 E1
3709 C1
3710 D1
3711 D1
3712 C1
3713 C1
3714 C1
3715 D1
3716 E1
3717 D1
3718 C1
3719 C1
3720 E1
3721 C1
3722 D1
3723 D1
3724 B1
3725 B1
3726 E1
3727 E1
3728 E1
3729 B1
3730 B1
3731 ■1
3732 B1
3733 E1
3734 B1
3735 B1
3736 C1
3737 B1
3738 ■1
3739 A1
3740 C1
3741 A1
3742 C1
3743 A1
3744 A1
3745 B1
3746 C1
3747 A1
3748 D1
3749 A1
3750 A1
3751 D1
3752 D1
3754 A1
3755 A1
3756 A1
3757 A1
3758 A1
3759 A1
3760 B1
3761 B1
3763 A1
3764 E1
3765 E1
3766 A1
3767 A1
3768 A1
3769 A1
3770 A1
3771 A1
3772 A1
3773 A1
3774 A1
3775 A1
3776 A1
3777 B1
3778 E1
9999 A1
5701 C1
6700 C1
6702 ■1
6703 B1
6704 C1
6705 ■1
7700 C1
7702 C1
7705 E1
7706 B1
7707 B1
7708 B1
7709 B1
7710 B1
7711 B1
7712 B1
7713 B1
7715 C1
7716 C1
7717 D1
7718 A1
7719 A1
7720 D1
9700 C1
9701 C1
9702 B1
9703 C1
9708 A1
9707 A1
9709 C1
9710 D1
9711 E1
9712 D1
9713 D1
9748 D1
9757 D1
9758 D1
9759 D1
9760 D1
9761 D1
9762 D1
9763 D1
9764 D1
9765 D1
9766 D1
9768 D1
9770 D1
9775 A1
9776 A1
9777 A1
9778 A1
9779 A1
9780 A1
9781 A1
9782 A1
9783 A1
9784 A1
9785 A1
9786 A1
9787 A1
9788 A1
9789 A1
9790 C1
9792 A1
9793 A1
9795 D1
9796 B1
9800 B1
9801 C1
9802 B1
9803 C1
9806 ■1
9807 C1
9808 C1
9809 C1
9812 C1
9813 C1
9814 C1

Side I/O Panel

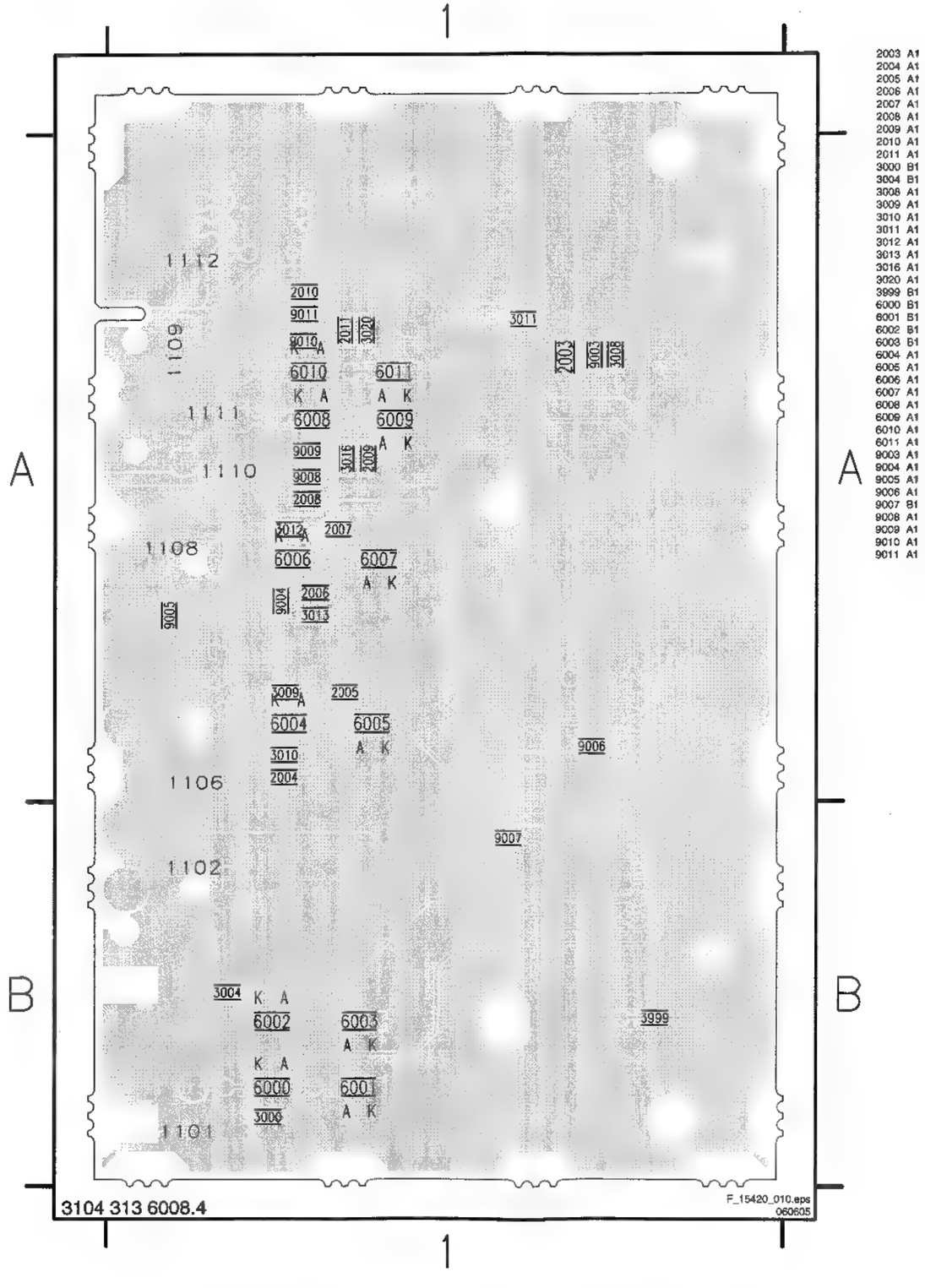


1001 B2	F002 A2
1002-1	F003 B2
1002-2 C1	F004 C2
1002-3 D1	F005 C2
1005 A8	F006 D2
1010 E1	F007 E2
1050 A7	F008 E2
1101 A3	F009 E2
1102 B3	F010 F8
1106 C3	F011 F9
1108 D3	F012 A6
1109 E3	F013 A7
1110 F3	F014 A6
1111 E3	F015 A7
1112 A7	F016 A6
1H01 A6	F017 A7
1M36 B8	F018 F7
1M37 B8	F019 F2
2003 C5	F020 B4
2004 C3	F021 C6
2005 C4	F022 C6
2006 D3	F023 C6
2007 D4	F024 E6
2008 F2	F025 E6
2009 F5	I001 C2
2010 E2	I002 C3
2011 E5	I003 D2
3000 A4	I004 A3
3004	I005 F4
3008 C5	I006 F4
3009 C4	I007 E4
3010 C4	I008 E4
3011 C5	I009 B3
3012 D4	I010 D3
3013 D4	I011 F7
3016 F5	I012 F8
3020 E5	I013 F3
3999 F9	I014 E3
5000 A7	
6000 A3	
6001 A3	
6002 B3	
6003 B3	
6004 C3	
6005 C3	
6006 D3	
6007 D3	
6008 F3	
6009 F3	
6010	
6011 F3	
9003 C6	
9004 C2	
9005 D2	
9006 F7	
9007 F8	
9008 F4	
9009 F4	
9010 E4	
9011 E4	
F001 A2	

Layout Side I/O Panel (Top Side)

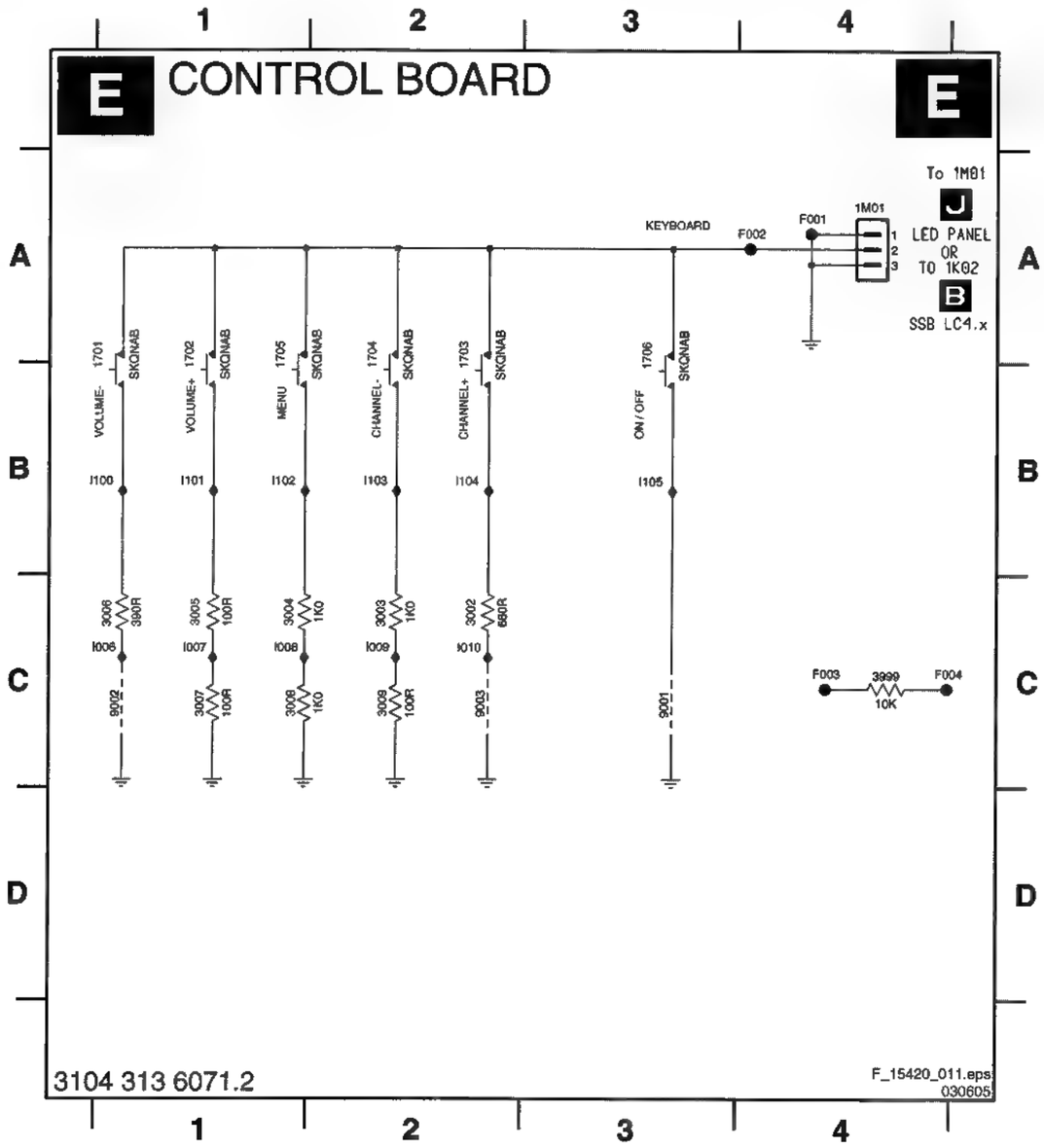


Layout Side I/O Panel (Bottom Side)



Control Board

1701 A1	1704 A2	1M01 A4	3004 C1	3007 C1	3999 C4	9003 C2	F003 C4	I007 C1	I010 C2	I102 B1	I105 B3
1702 A1	1705 A1	3002 C2	3005 C1	3008 C1	9001 C3	F001 A4	F004 C4	I008 C1	I100 B1	I103 B2	
1703 A2	1706 A3	3003 C2	3006 C1	3009 C2	9002 C1	F002 A4	I006 C1	I009 C2	I101 B1	I104 B2	

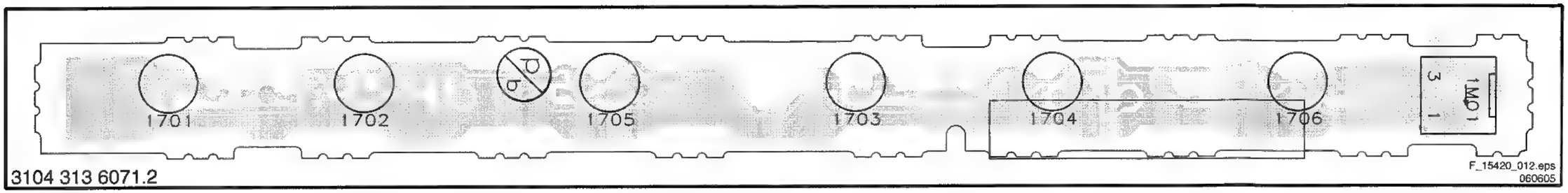


Personal Notes:

E_06532_012.eps 131004

Layout Control Board (Top Side)

1701 -- 1702 -- 1703 -- 1704 -- 1705 -- 1706 -- 1M01 --

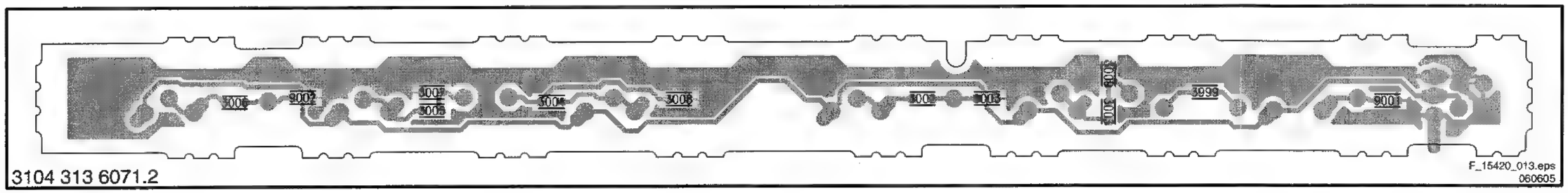


3104 313 6071.2

F_15420_012.eps
060605

Layout Control Board (Bottom Side)

3002 -- 3003 -- 3004 -- 3005 -- 3006 -- 3007 -- 3008 -- 3009 -- 3999 -- 9001 -- 9002 -- 9003 --



3104 313 6071.2

F_15420_013.eps
060605

LED Panel

LED PANEL

"BLUE" or "GREEN"

"RED"

"LED DIMMING"

"IR RECEIVER"

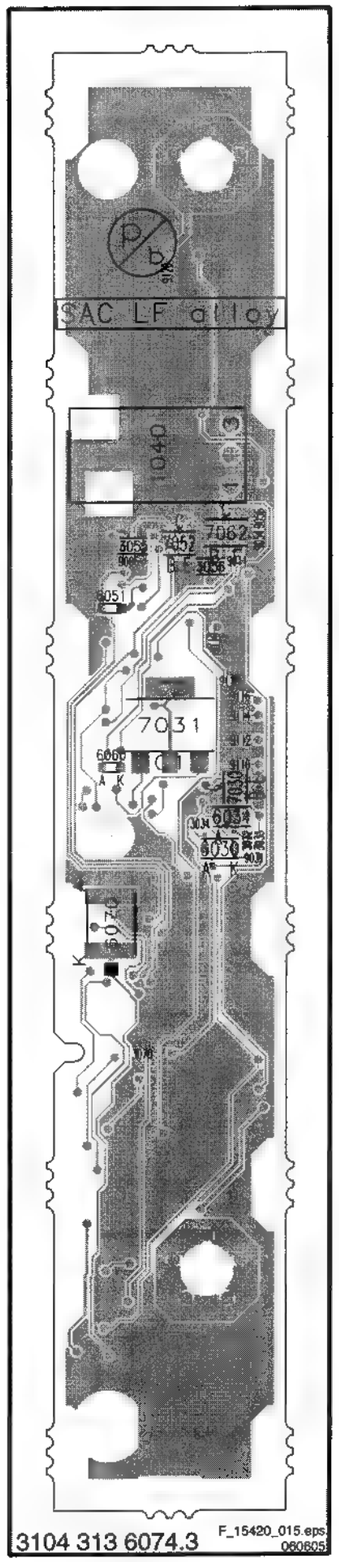
"LIGHT SENSOR"

3104 313 6074.3

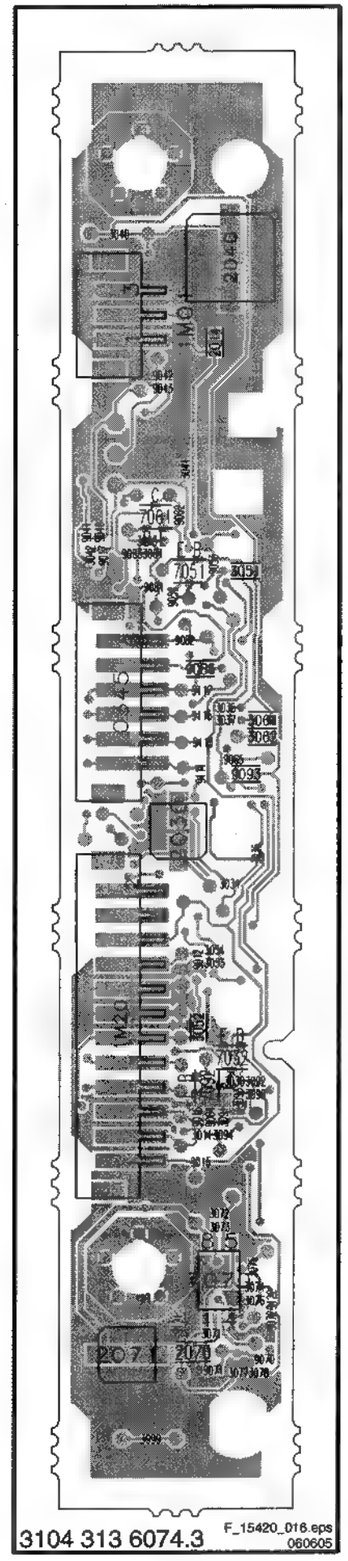
F_15420_014.eps 030505

0001 A10 9119 E2
0002 A11 9120 B10
0345 D2 9121 B11
1040 F9 9122 F11
1M01 C2 F010 A3
1M20 A2 F011 A3
2014 C4 F012 A3
2030 G5 F013 B3
2040 F9 F014 B3
2070 F12 F015 A3
2071 G12 F016 B3
3011 A4 F017 B3
3030 G4 F018 B2
3031 G5 F021 C3
3032 G5 F038 B12
3033 G5 F039 B12
3034 G6 F083
3035 G6 F084 D3
3036 G7 F085 E3
3037 G7 F089 E3
3040 F9 I010 F2
3041 G9 I011 G2
3042 F9 I012 E3
3051 B8 I013 E4
3052 B8 I026 F12
3053 C8 I033 G4
3054 C8 I037 G7
3055 C8 I038 G6
3056 D6 I039 G4
3061 B8 I040 G5
3062 B8 I041 G9
3063 D5 I042 G9
3064 D5 I043 F9
3070 G11 I044 F9
3071 F12 I045 F9
3072 G13 I046 E9
3073 G13 I047 G4
3074 F13 I048 G5
3075 F14 I049 G7
3076 G14 I051 D8
3077 G12 I052 C8
3078 G11 I053 B9
3091 G2 I054 D7
3092 F2 I061 D6
3093 F3 I062 C6
3094 F2 I063 D7
3096 G3 I064 D5
3099 B12 I065 C9
6030 G4 I071 F11
6031 G4 I072 F14
6051 C8 I073 G12
6060 C8 I074 G12
6070 G11 I075 F12
7030 G6 I076 F13
7031 G7 I093 F2
7032 G4 I094 F3
7051 C8 I095 C6
7052 D8
7061 D8
7062 C8
7070-1 F12
7070-2 G13
7092 F2
9011 C6
9012 B4
9015 A4
9016 A4
9017 A4
9031 G4
9040 G9
9041 F9
9042 G8
9043 F9
9052 D9
9053 C8
9054 D9
9056 D7
9062 D7
9063 D6
9064 B7
9065 B7
9066 D7
9070 F11
9071 F11
9072 G11
9081 E4
9082 E3
9083 D3
9093 G2
9110 D2
9111 D4
9112 D2
9113 D4
9114 E2
9115 E4
9116 E2
9117 E4
9118 E2

Layout LED Panel



1040 --
3031 --
3032 --
3033 --
3055 --
3056 --
3070 --
6030 --
6031 --
6051 --
6060 --
6070 --
7030 --
7031 --
7052 --
7062 --
9011 --
9031 --
9054 --
9056 --
9066 --
9110 --
9112 --
9114 --
9116 --
9118 --
9119 --
9120 --



0345 --
1M01 --
1M20 --
2014 --
2030 --
2040 --
2070 --
2071 --
3011 --
3030 --
3034 --
3035 --
3036 --
3037 --
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3999 --
7032 --
7051 --
7061 --
7070 --
7092 --
9012 --
9015 --
9016 --
9017 --
9040 --
9041 --
9042 --
9043 --
9052 --
9053 --
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9063 --
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9117 --
9121 --
9122 --

Personal Notes:

E_06532_012.eps
131004

IBO Zapper: Mojo

K1 MOJO

FOR DEV. ONLY

FOR DEV. ONLY

(JTAG-ETAG-SYS)

(TS)

(AV)

(I2C-USB-SCO)

(PWR)

(SDRAM)

(GPIO)

(MIU)

3139 123 5906.2

F_15270_054.eps 190505

IBO Zapper: Flash Memory

K2 FLASH MEMORY

K2

EPROM 4Mx8/2Mx16

2/4/8MB NOR FLASH

SYNC DRAM 4x2Mx16

2/4/8MB NOR FLASH

(8Kx8) EEPROM SYSTEM

OPTION

MECHANICAL 3.5MM HOLE

0001 TYPE 0002 TYPE 0003 TYPE 0004 TYPE

0005 HEATSINK 0006 HEATSINK 0007 HEATSINK 0008 HEATSINK 0009 HEATSINK 0010 HEATSINK 0011 HEATSINK

0012 HEATSINK 0013 HEATSINK 0014 HEATSINK 0015 HEATSINK 0016 HEATSINK 0017 HEATSINK 0018 HEATSINK

0001 H1
0002 H1
0003 H2
0004 H2
0005 H3
0006 H4
0007 H4
0008 H5
0009 H5
0010 H6
0011 H6
0012 G7
0013 G8
0014 G9
0015 G9
0016 G10
0017 G10
0018 G11
2200 A13
2201 A12
2202 A13
2203 A8
2204 A9
2205 B13
2206 D5
2207 E4
2208 E4
2209 E4
2210 E4
2211 E4
2212 E4
2213 E4
2214 F11
3200 D6
3201 D14
3202 D13
3203 E11
3204 E12
3205 D9
3208 F12
3207 F13
3209 F13
3210 F13
3211 F12
3212 C11
4200 D7
4201 D7
4202 C7
4203 D7
4204 D7
4205 C9
4212 F13
4213 D13
4214 D11
4215 D9
5200 A12
5201 A8
5202 D3
5203 E11
7200 B8
7201 B12
7202 E3
7203 F11
F200 F12
F201 D8
I200 A12
I201 A8
I202 D4
I203 C12
I204 D7
I205 D8
I206 D9
I207 F12
I208 F13
I209 D12
I210 D12
I211 D13

3139 123 5906.2

F_15270_055.eps
190505

IBO Zapper: Power Supply

K3 POWER SUPPLY

FROM 1220 OF POWER SUPPLY BOARD

POWER ON RESET

FOR DEV. ONLY

3139 123 5906.2

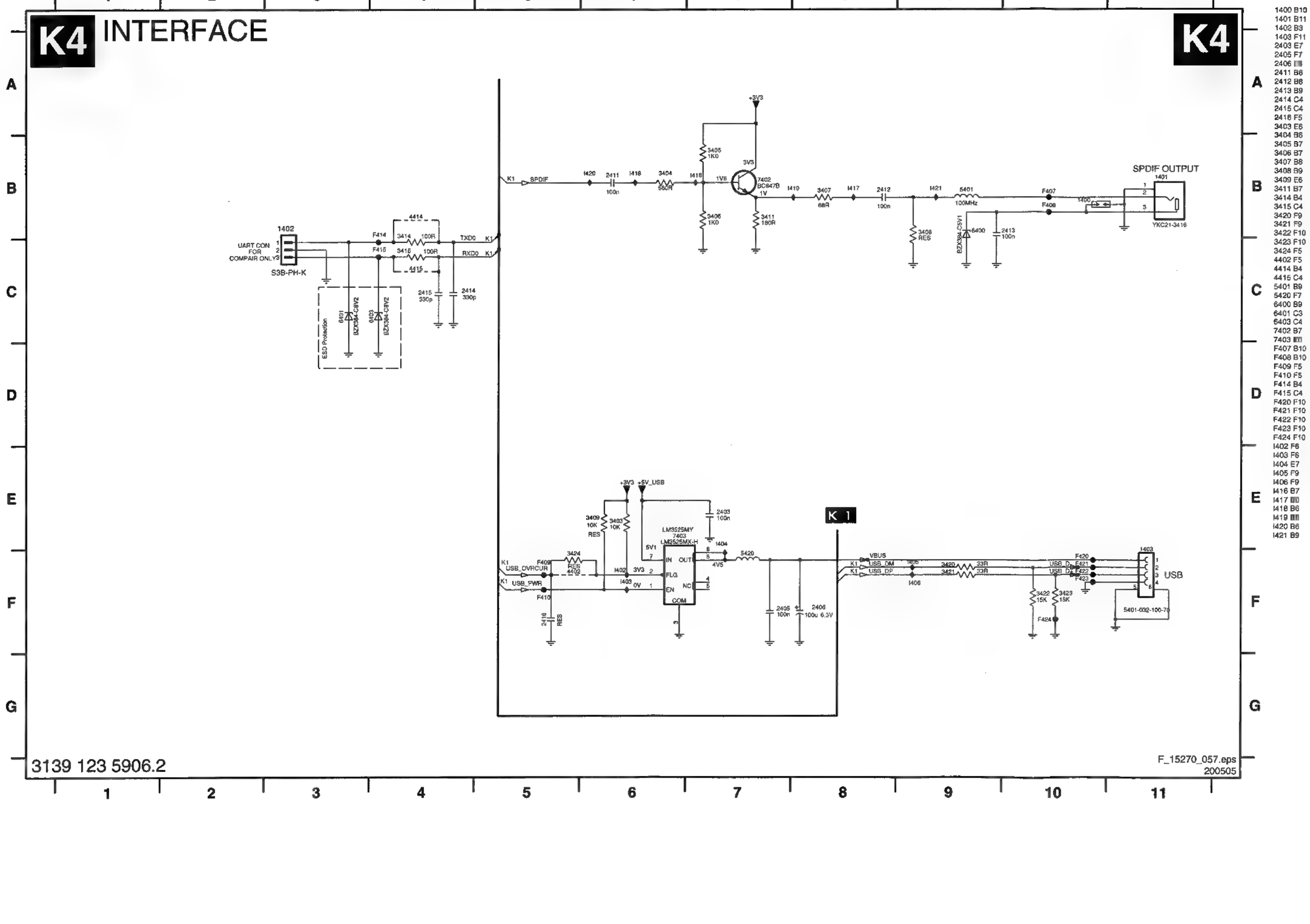
F_15270_056.eps 190505

1301 B1 F314 I13
1303 H9 F315 G7
1304 B6 F316 H11
2300 B10 F317 F13
2301 B7 I301 D2
2302 C13 I302 D1
2303 C8 I306 D1
2304 C11 I310 A11
2305 F11 I312 A13
2306 C12 I313 B13
2308 D10 I314 B10
2309 E7 I316 B7
2310 E8 I317 B11
2311 E11 I318 B8
2312 A11 I321 D11
2313 G10 I322 D7
2314 H2 I323 E8
2315 H7 I324 G11
2316 H8 I326 H7
2317 H12 I326 H6
2318 H11 I327 E11
2319 I13 I328 B2
2320 C12 I330 F11
2321 D11 I331 F11
2322 G11
2323 A11
2324 B10
2325 D10
2326 H11
2327 H11
2328 I11
2329 C9
2330 E12
2331 H9
2332 F13
2333 B2
2334 B3
2335 B3
2336 E9
2337 B11
3300 A7
3301 A7
3302 A8
3303 A7
3304 B9
3306 C6
3307 C9
3311 D8
3312 D7
3313 D7
3314 D7
3315 E9
3316 G9
3317 E9
3318 G7
3319 G7
3320 G7
3321 G6
3322 H9
3323 H8
3324 A12
3325 A13
3326 A11
3327 A13
3328 B13
3329 A12
3330 A11
3331 I8
3332 E9
3333 B11
3334 C12
4302 F11
4303 E12
5300 B11
5301 B7
5302 C12
5303 D11
5304 D6
5305 H11
5306 H6
5307 E12
5309 B3
5300 A10
6303 D11
6304 G11
6305 F11
6306 E11
6307 B12
7301 C12
7302 F12
7303 C8
7305 F8
7306 G2
7307 H12
7308 I12
7309 A13
7310 A12
7311 B11
7312 B12
F300 A7
F301 B5
F302 B5
F303 B13
F304 C13
F305 C1
F306 C1
F307 C12
F308 D7
F309 B2
F310 E12
F312 H2
F313 H13

IBO Zapper: Interface

K4 INTERFACE

K4



3139 123 5906.2

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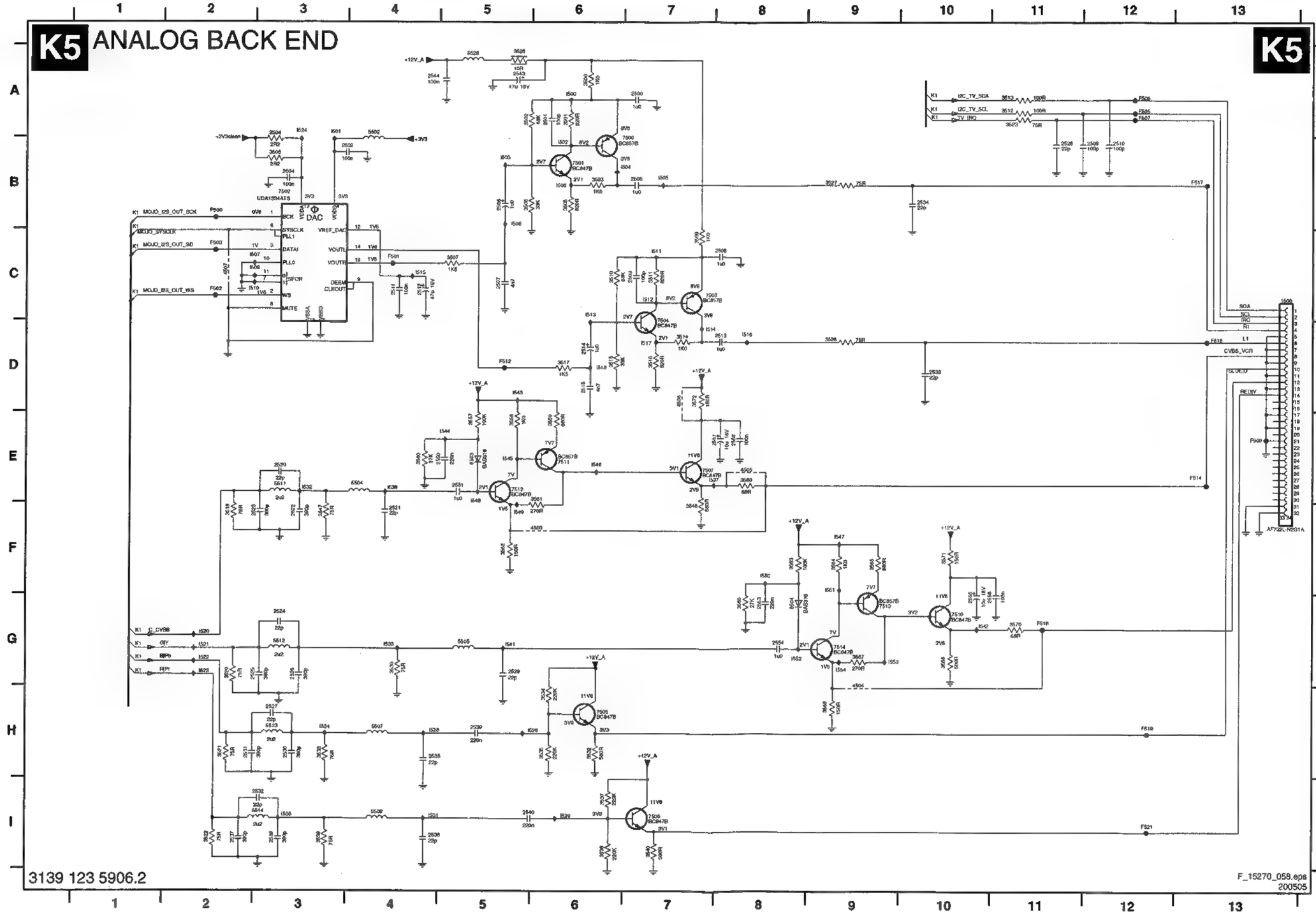
200505

1400 B10
1401 B11
1402 B3
1403 F11
2403 E7
2405 F7
2406
2411 B6
2412 B6
2413 B9
2414 C4
2415 C4
2416 F5
3403 E6
3404 B6
3405 B7
3406 B7
3407 B8
3408 B9
3409 E6
3411 B7
3414 B4
3415 C4
3420 F9
3421 F9
3422 F10
3423 F10
3424 F5
4402 F5
4414 B4
4415 C4
5401 B9
5420 F7
6400 B9
6401 C3
6403 C4
7402 B7
7403
F407 B10
F408 B10
F409 F5
F410 F5
F414 B4
F415 C4
F420 F10
F421 F10
F422 F10
F423 F10
F424 F10
I402 F6
I403 F6
I404 E7
I405 F9
I406 F9
I416 B7
I417
I418 B6
I419
I420 B6
I421 B9

IBO Zapper: Analog Back End



1500 C13 5512 G3
2500 A7 5513 H3
2501 A6 5514 I3
2502 B3 5528 A5
2503 C7 6503 E5
2504 B3 6504 G8
2505 B7 7500 A6
2506 B5 7501 B6
2507 C5 7502 B3
2508 C8 7503 C7
2509 B12 7504 D7
2510 B12 7505 H6
2511 C4 7506 I7
2512 C4 7507 E7
2513 D8 7510 G10
2514 D6 7511 E6
2515 D6 7512 E5
2520 E3 7513 G9
2521 F4 7514 G9
2522 F3 F500 B2
2523 F3 F501 C4
2524 G3 F502 C2
2525 G3 F503 C2
2526 G3 F505 A12
2527 H3 F506 A12
2528 B11 F507 A12
2529 G5 F509 E13
2530 H3 F512 D6
2531 H2 F514 E13
2532 I3 F516 D13
2533 D10 F517 B13
2534 B10 F518 G11
2535 H4 F519 H12
2536 I4 F521 I12
2537 I2 I500 A6
2538 I3 I501 A9
2539 H5 I502 B6
2540 I5 I503 B5
2543 A5 I504 B7
2544 A4 I505 B7
2550 E5 I506 B6
2551 E5 I507 C2
2553 G8 I508 B5
2554 G8 I509 C2
2555 G10 I510 C2
2558 G11 I511 C7
2557 E8 I512 C7
2558 E8 I513 C6
3500 A6 I514 D7
3501 A6 I515 C4
3502 A5 I516 D6
3503 B6 I517 D7
3504 A3 I518 D6
3505 B6 I520 G2
3506 B5 I521 G2
3507 C5 I522 G2
3508 B3 I523 G2
3509 C7 I524 A3
3510 C6 I528 H6
3511 C7 I528 H4
3512 A11 I529 I6
3513 A11 I531 I4
3514 D7 I532 E3
3515 D6 I533 G4
3516 D7 I534 H3
3517 D6 I535 I3
3519 F2 I537 E7
3520 G2 I538 E4
3521 H2 I541 G5
3522 I2 I542 G10
3523 A11 I543 D5
3526 D9 I544 E5
3527 B9 I545 E5
3528 A5 I548 E8
3530 G4 I547 F9
3532 H6 I548 ■
3533 H3 I549 ■
3534 H6 I550 F8
3535 H5 I551 F9
3537 I6 I552 G8
3538 I6 I553 G9
3539 I3 I554 G9
3540 I7
3547 F3
3548 F7
3556 G10
3557 E5
3558 E5
3559 E6
3560 E4
3561 ■
3562 F5
3563 F8
3564 F9
3565 F6
3566 G8
3567 G9
3568 H9
3569 E8
3570 G11
3571 F10
3572 D7
4503 ■
4504 H9
4505 E8
4506 D7
4507 C2
5502 A4
5504 E4
5505 G5
5507 H4
5508 I4
5511 E3

IBO Zapper: Front End

K6 FRONT END

TUNER

COFDM CHANNEL DECODER

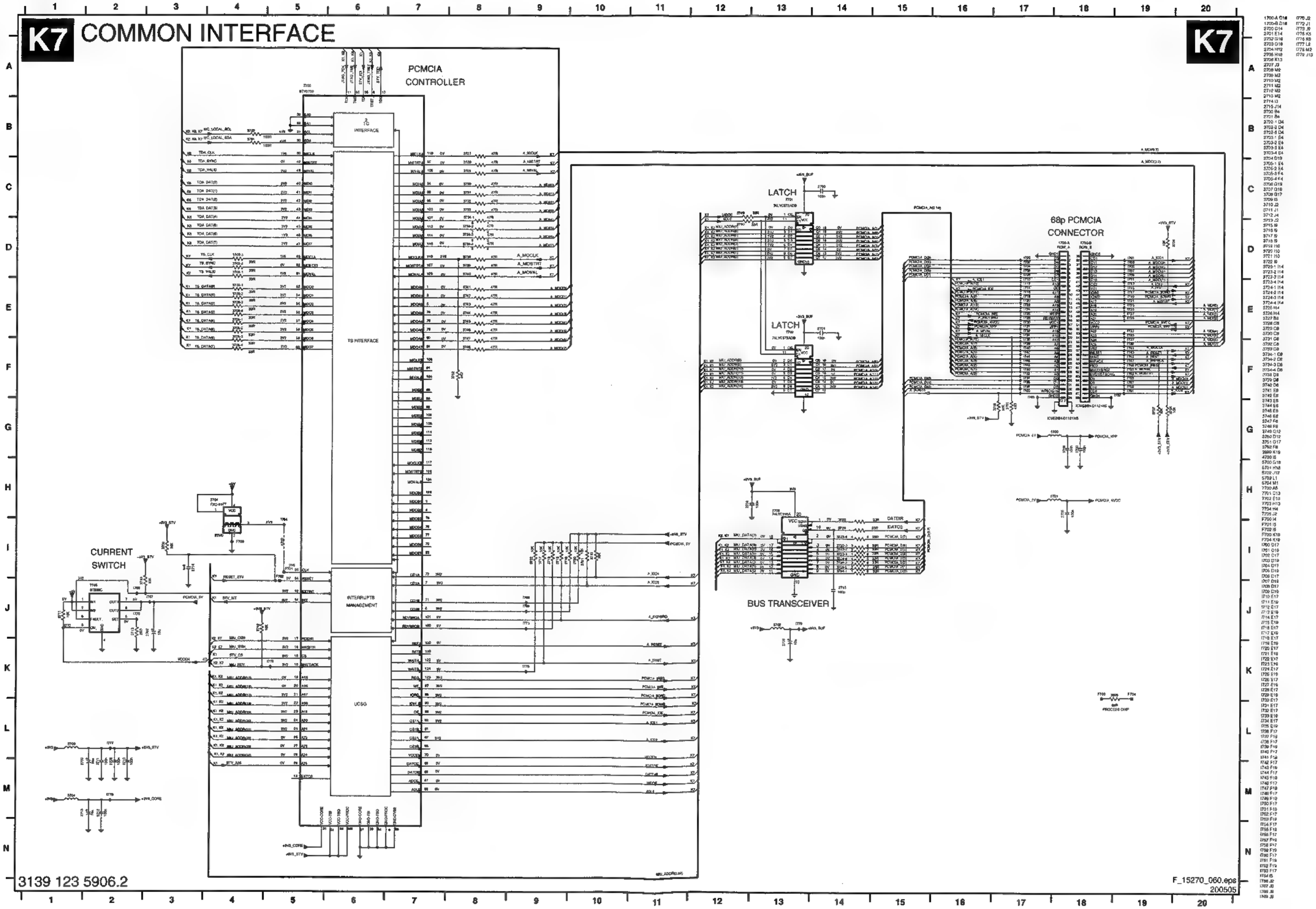
EEPROM

RESERVED

F_15270_059.eps 200505

3139 123 5906.2

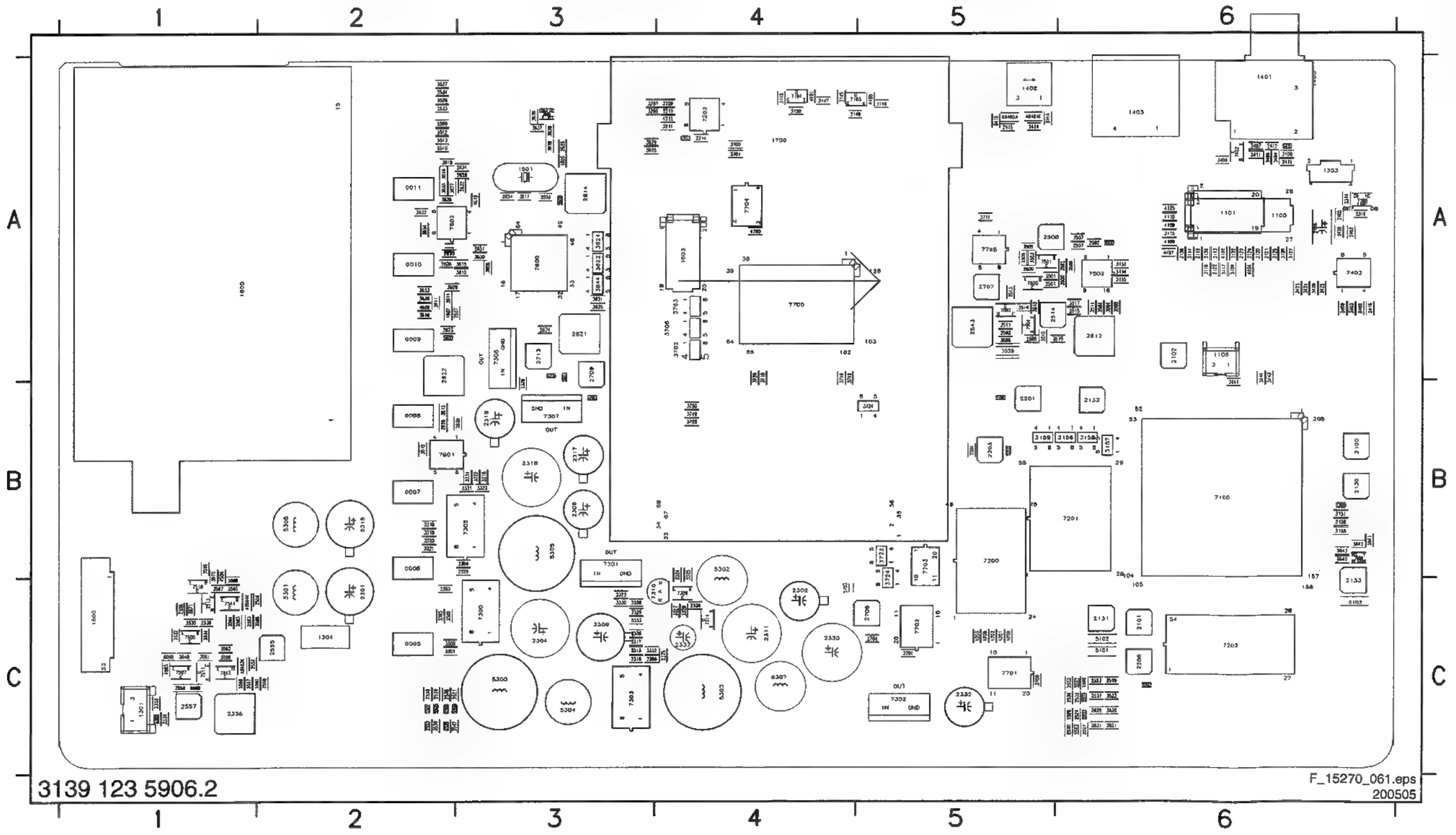
IBO Zapper: Common Interface



Layout IBO Zapper (Top Side)

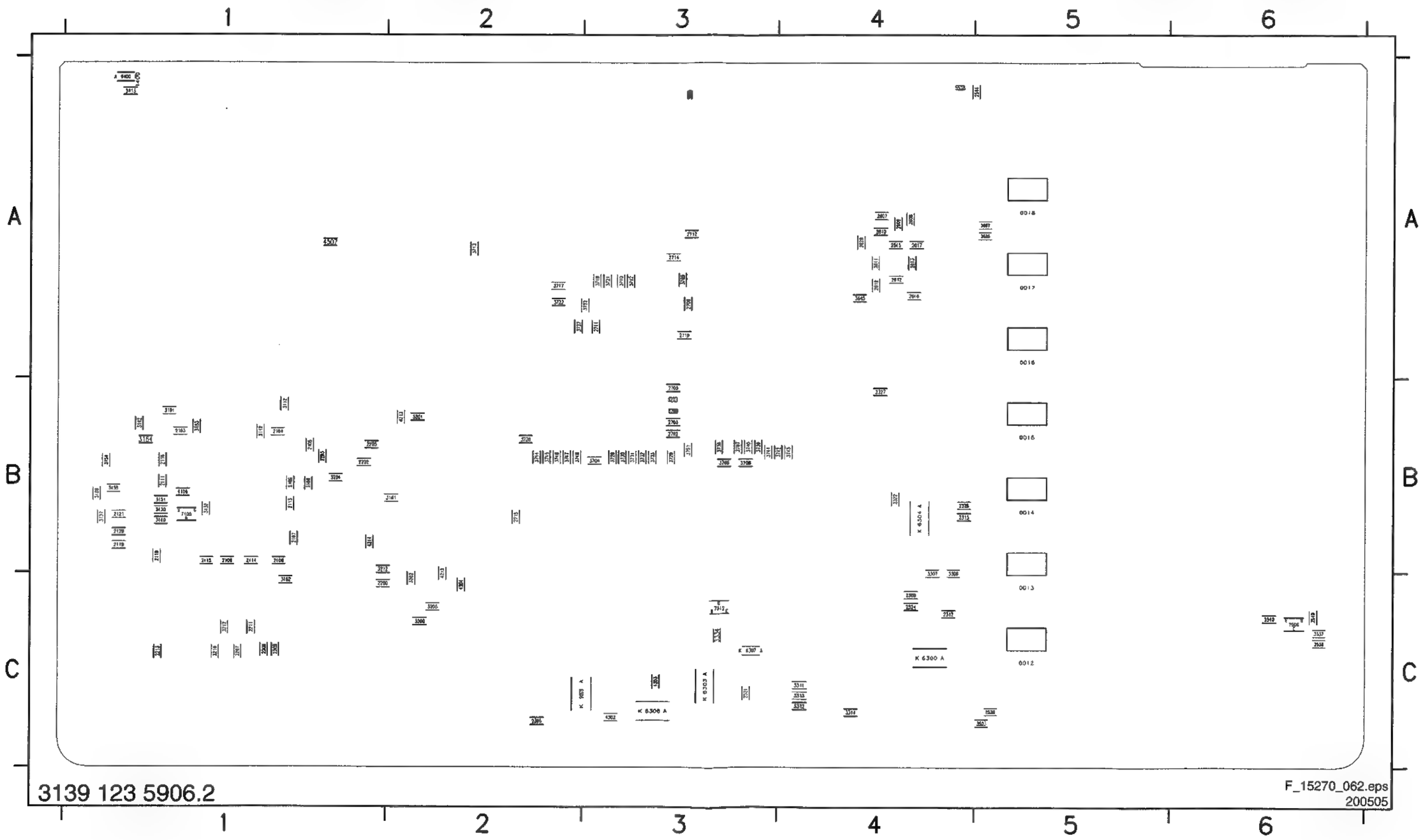
0005	C2	2101	C6	2315	B2	2412	A6	2522	C6	2555	C2	2704	C5	3133	A6	3210	A4	3330	C3	3503	A5	3530	C2	3570	B1	3627	A2	3711	A5	4202	C5
0006	B2	2102	A6	2316	B3	2414	A6	2523	C6	2556	C1	2706	C5	3134	A6	3211	A4	3331	B3	3504	A6	3531	C1	3571	C1	3629	A3	3715	A4	4203	C5
0007	B2	2125	A6	2317	B3	2415	A6	2524	C6	2557	C1	2707	A5	3135	A6	3300	C2	3332	C3	3505	A6	3532	C1	3572	C1	3630	A3	3716	A4	4205	C5
0008	B2	2130	B6	2318	B3	2416	A6	2525	C6	2558	C1	2709	A5	3136	B6	3301	C2	3333	C3	3506	A6	3533	C1	3608	A3	3631	A3	3719	A4	4212	A4
0009	A2	2131	C6	2319	B3	2500	A6	2526	C6	2614	A3	2713	A5	3137	A6	3302	C2	3334	C3	3507	A6	3534	C1	3609	A2	3632	A2	3720	A4	4402	A6
0010	A2	2132	B6	2320	C4	2501	A5	2527	C6	2621	A3	3100	A6	3139	A6	3303	C2	3404	A6	3508	A6	3535	C1	3610	A2	3633	A2	3723	B5	4414	A5
0011	A2	2133	C6	2321	C3	2502	A6	2528	C6	2622	A2	3113	A6	3141	B6	3304	C2	3405	A6	3509	A5	3536	C1	3611	A2	3634	A3	3724	B5	4415	A5
1100	A6	2201	B5	2322	C4	2503	A5	2530	C6	2623	A2	3114	A6	3143	A6	3305	C3	3406	A6	3510	A5	3537	C1	3612	B2	3635	A3	3725	B5	4503	C1
1101	A6	2203	B5	2323	B3	2504	A6	2531	C6	2624	A3	3115	A6	3144	A6	3306	C3	3407	A6	3511	A5	3538	C1	3613	B2	3636	A3	3734	C5	4504	C1
1106	A6	2204	B5	2329	B3	2505	A5	2532	C6	2625	A3	3116	A6	3145	A4	3307	C3	3408	A6	3512	A2	3539	C1	3614	A2	3637	A3	3749	B4	4505	C1
1301	C1	2206	C6	2330	C4	2506	A5	2533	A2	2626	B2	3117	A6	3146	A5	3308	B2	3409	A6	3513	A2	3550	C1	3615	A3	3638	A3	3750	B4	4506	C1
1303	A6	2214	A4	2331	B3	2507	A6	2534	A2	2627	A2	3119	A6	3147	A4	3309	B2	3411	A6	3514	A5	3556	C1	3616	A2	3639	A3	4100	A5	4605	A3
1304	C2	2301	C2	2332	C5	2508	A5	2535	C2	2628	A2	3120	A6	3148	A4	3310	B2	3414	A5	3515	A6	3560	C1	3617	A3	3640	B6	4101	A4	4606	A2
1401	A6	2302	C4	2333	C1	2509	A2	2536	C2	2629	A3	3121	A6	3149	A4	3311	B2	3415	A5	3516	A5	3561	C1	3618	A2	3641	B6	4102	A6	4607	A2
1402	A5	2303	C2	2334	C1	2510	A2	2537	C6	2630	B3	3122	A6	3150	A4	3312	B3	3420	A6	3517	A6	3562	C1	3619	A2	3642	B6	4104	A6	4610	A3
1403	A6	2304	C3	2335	C1	2511	A6	2538	C6	2631	A3	3123	A6	3156	B6	3313	B3	3421	A6	3519	C6	3563	C1	3620	A2	3643	B6	4105	A6	4700	A4
1500	C1	2306	B3	2336	C3	2512	A6	2539	C1	2632	A3	3124	A6	3157	B6	3324	B4	3422	A6	3520	C6	3564	C1	3621	A3	3644	A3	4106	A6	5100	B6
1600	A1	2308	C3	2337	C4	2513	A5	2543	A5	2633	A3	3125	A6	3158	B6	3325	B4	3423	A6	3521	C6	3565	C1	3622	A3	3700	A4	4107	A6	5101	C6
1601	A3	2309	C3	2403	A6	2514	A5	2550	C2	2634	A3	3126	A6	3159	B6	3326	C3	3424	A6	3522	C6	3566	C2	3623	A2	3701	A4	4109	A6	5102	C6
1603	A4	2310	C3	2405	A6	2515	A6	2551	C1	2635	A2	3127	A6	3206	A3	3327	C4	3500	A6	3526	A2	3567	C1	3624	A3	3702	A4	4110	A6	5103	C6
1700	A4	2311	C4	2406	A6	2520	C6	2553	C1	2700	C5	3128	B6	3207	A3	3328	C4	3501	A5	3527	A2	3568	C1	3625	A3	3703	A4	4200	C5	5200	B5
2100	B6	2314	A6	2411	A6	2521	C2	2554	C2	2701	C5	3131	B6	3209	A4	3329	C3	3502	A6	3528	A5	3569	C1	3626	A2	3705	A4	4201	C5	5201	B5

5202	C6	5600	A3	7305	B3	7600	A3	7705	A5																						
5203	A4	5601	A3	7306	A6	7601	B2																								
5300	C2	5602	A2	7307	B3	7602	A2																								
5501	C2	5603	A2	7308	A3	7605	A3																								
5502	B4	5702	C4	7309	C4	7606	B6																								
5503	C4	5704	A4	7310	C3	7700	A4																								
5504	B5	5705	A5	7311	C4	7701	C5																								
5505	C1	6401	A5	7402	A6	7702	C5																								
5506	C1	6402	A5	7403	A5	7703	B5																								
5507	C2	6503	C1	7500	A5	7704	A5																								
5508	C2	6504	C6	7501	A5	7705	A5																								
5509	C2	7100	B6	7502	A6																										
5510	C2	7103	A4	7503	A5																										
5511	C6	7104	A4	7504	A5																										
5512	C6	7200	B5	7505	C1																										
5513	C6	7201	B6	7507	C1																										
5514	C6	7202	C6	7510	C1																										
		7203	A4	7511	C1																										
		7300	C3	7512	C1																										
		7301	B3	7513	C1																										
		7303	C3	7514	C1																										



Layout IBO Zapper (Bottom Side)

1400	A1	2111	B1	2200	C1	2213	C1	2327	B4	2611	A4	2703	B3	3112	B1	3155	B1	3203	B1	3314	C4	3704	B3	3718	A3	3732	B3	3745	B2	4213	B2	6300	C4	7506	C6
2103	B1	2112	B1	2202	B1	2300	C4	2413	A1	2612	A4	2705	B3	3129	B1	3160	B1	3204	B1	3334	C3	3706	B3	3721	A3	3733	B3	3746	B2	4214	B1	6303	C3		
2104	B1	2113	B1	2205	B1	2305	C2	2528	C5	2613	A4	2708	A3	3130	B1	3161	B2	3205	C2	3523	C5	3707	B3	3722	A2	3738	B3	3747	B2	4215	C2	6304	B4		
2105	B1	2114	B1	2207	C1	2312	C4	2540	C6	2615	A4	2710	A3	3132	B1	3162	C1	3212	B1	3537	C6	3708	B3	3726	B2	3739	B3	3748	B2	4302	C3	6305	C2		
2106	B1	2115	B1	2208	C1	2313	B4	2544	A5	2617	A4	2711	A3	3137	B1	3163	B1	3506	C4	3538	C6	3709	A3	3727	A2	3740	B3	3751	B3	4303	C3	6308	C3		
2107	B1	2116	B1	2209	C1	2321	C3	2607	A4	2618	A4	2712	A3	3140	B1	3164	B1	3507	C4	3540	C6	3710	A3	3728	B3	3741	B3	3752	A3	4507	A1	6307	C3		
2108	B1	2119	B1	2210	X1	2322	B4	2608	A4	2619	A4	2714	A3	3142	B1	3200	C2	3511	C4	3606	A5	3712	A3	3729	B3	3742	B4	3999	A3	5528	A4	6400	A1		
2109	B1	2120	B1	2211	C1	2324	C4	2609	A4	2620	A4	2715	B2	3151	B1	3201	B2	3512	C4	3607	A5	3713	A2	3730	B3	3743	B4	4108	B1	5700	B3	7105	B1		
2110	B1	2121	B1	2212	C1	2326	B4	2610	A4	2702	B3	3101	B1	3154	B1	3202	C2	3313	C4	3645	A4	3717	A2	3731	B3	3744	B2	4204	C2	5701	B3	7312	C3		



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8. Alignments

Index of this chapter:
8.1 General Alignment Conditions
8.2 Hardware Alignments
8.3 Software Alignments

Note: Figures below can deviate slightly from the actual situation, due to the different set executions.

General: The Service Default Mode (SDM) and Service Alignment Mode (SAM) are described in chapter 5. Menu navigation is done with the Cursor Up, Down, Left or Right keys of the remote control transmitter.

8.1 General Alignment Conditions

Perform all electrical adjustments under the following conditions:
Mains voltage and frequency: 100-240 V / 50/60 Hz.
Allow the set to warm up for approximately 10 minutes.
Test probe: Ri > 10 MΩ; Ci < 2.5 pF.

8.2 Hardware Alignments

There are no hardware alignments foreseen for the plasma-TV.

8.3 Software Alignments

With the software alignments of the Service Alignment Mode (SAM) the geometry, white tone and tuner (IF) can be aligned.
To store the data: Use the RC button Menu to switch to the main menu and next, switch to 'Stand-by' mode.

8.3.1 SAM Menu

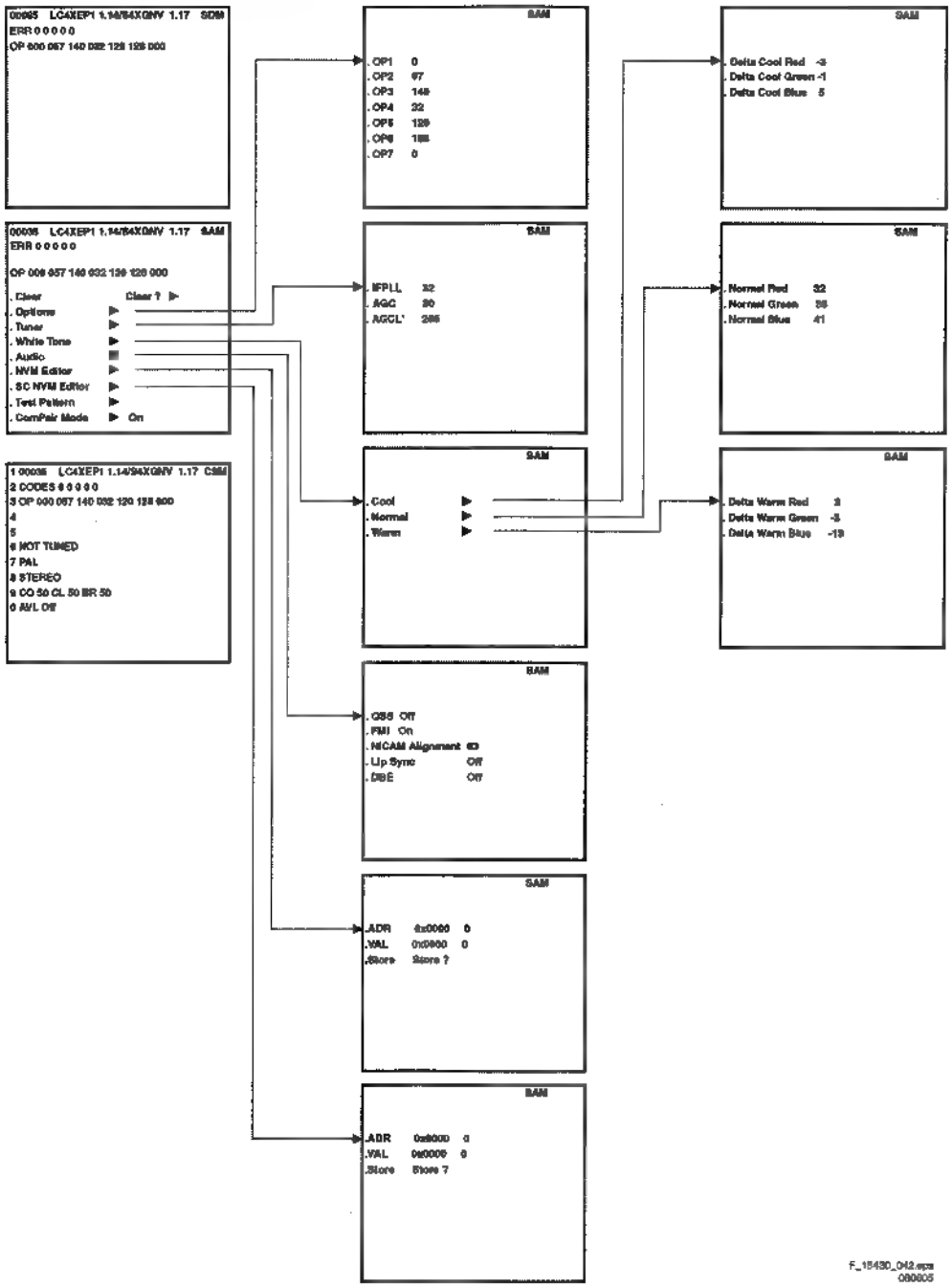

Figure 8-1 Overview SAM menu.

8.3.2 Tuner Adjustment

AGC (RF AGC Take Over Point)

- Activate the SAM menu.
- Go to the sub-menu Tuner.
- Select the AGC sub-menu.
- Adjust the AGC value to AGC = 27.
- Adjust the AGC L' value to AGC L' = 27 (Europe only).
- Adjust the IFPLL value to IFPLL = 32 (Europe only).
- Switch the set to standby to store the data.

8.3.3 DCXO (Digital Xtal Oscillator) Alignment (for NICAM sets only)

- Input a Colour bar signal with a colour subcarier frequency of 4.43 MHz on SCART1 or SCART2.
- Select as a signal source EXT1 or AV1.
- Go to the SAM menu and select Audio.
- Activate DCXO Alignment and wait until this process has finished (DONE).
- Check if the NICAM audio reception is OK, if not: repeat the procedure.
- Switch the set to standby to store the data.

8.3.4 ADC Gain and Grey Scale Alignment

The table below shows a number of NVM settings used for each model of TV set. Be sure to use the correct editor in the SAM menu (NVM Editor or SC NVM Editor), because the first one is used for the Hercules NVM, and the second one for the SCALER (SC) part of the TV set. For further important NVM settings, see also the other NVM tables elsewhere in this manual.

Caution:

- **Do not change the NVM settings without understanding the function of each setting, because incorrect NVM settings may seriously hamper the correct functioning of the TV set!**
- **Do not change the Scaler NVM settings, as this will hamper the DVI functionality of the TV set!**
- Always note down the existing NVM settings, before changing the settings. This will enable you to return to the orgininal settings, if the new settings turn out to be incorrect.

Table 8-1 ADC gain and grey scale alignment

SDTV ADC Gain settings: Use the NVM Editor in SAM to set these values in the Hercules NVM				
		These models are with ADC & Columbus 3D Combfilter		
Setting	Hercules NVM Address (decimal value)	42PF7520D/10	42PF8520D/10	Settings Range (decimal value)
NVM_ADC_GAIN_R	006	143	143	075 - 155
NVM_ADC_GAIN_G	007	191	191	200 - 250
NVM_ADC_GAIN_B	008	143	143	075 - 155

SDTV Greyscale settings: Use the SC NVM Editor in SAM to set these values in the Scaler NVM				
		These models are with ADC & Columbus 3D Combfilter		
Setting	Scaler NVM Address (decimal value)	42PF7520D/10	42PF8520D/10	Settings Range (decimal value)
ADC_RED_OFFSET2	338	080	080	050 - 110
ADC_GRN_OFFSET2	339	080	080	050 - 110
ADC_BLU_OFFSET2	340	080	080	050 - 110
ADC_RED_GAIN	341	154	154	045 - 095
ADC_GRN_GAIN	343	154	154	045 - 095
ADC_BLU_GAIN	345	154	154	045 - 095
PC Greyscale settings				
		These models are with ADC & Columbus 3D Combfilter		
Setting	Scaler NVM Address (decimal value)	42PF7520D/10	42PF8520D/10	Settings Range (decimal value)
ADC_RED_OFFSET2	325	080	080	040 - 090
ADC_GRN_OFFSET2	326	080	080	040 - 090
ADC_BLU_OFFSET2	327	080	080	040 - 090
ADC_RED_GAIN	328	154	154	180 - 270
ADC_GRN_GAIN	330	154	154	180 - 270
ADC_BLU_GAIN	332	154	154	180 - 270
HD Greyscale settings				
		These models are with ADC & Columbus 3D Combfilter		
Setting	Scaler NVM Address (decimal value)	42PF7520D/10	42PF8520D/10	Settings Range (decimal value)
ADC_RED_OFFSET2	351	064	064	050 - 090
ADC_GRN_OFFSET2	352	082	082	050 - 090
ADC_BLU_OFFSET2	353	064	064	050 - 090
ADC_RED_GAIN	354	159	159	120 - 200
ADC_GRN_GAIN	356	144	144	120 - 200
ADC_BLU_GAIN	358	147	147	120 - 200

8.3.5 Sound

- For NICAM sets: see paragraph 8.3.3.
- For other sets: No adjustments needed for sound.

8.3.6 Options

Options OP1...OP7 in the SAM menu can be used for quickly restoring 64 features or settings of the HERCULES part of the TV set to their orginal default factory values (8 groups of 8 features/settings each). When the decimal value of one option byte OP1...OP7 is changed (see the first table below) then a group of 8 bits, representing 8 HERCULES options or features, is changed as well (see the second table below for a detailed description of the features or settings that are changed).
The second table shows which option byte (OP1...OP7) represents which group of 8 option bits. Each bit (0...7) switches a particular HERCULES feature or setting ON or OFF, depending on its value (1 or 0).
It is also possible to change the features or settings mentioned in the second table directly at bit level, by means of the NVM Editor in the SAM menu. In the NVM Editor, first the correct NVM address (ADR) has to be entered, then the correct value (VAL, 1 or 0) for each bit (see second table), and finally the settings have to be stored (STORE). For quickly restoring the HERCULES part of the TV set to its original factory settings, however, it is more convenient to simply enter the default factory settings OP1...OP7 that are given in the first table below. How to do this, is described in the next paragraph.

How to Change an Option Byte

As has been explained above, an Option byte (OP) represents a number of different HERCULES options. Changing these bytes directly makes it possible to set all HERCULES options very fast. All options are controlled via seven option bytes. Select the option byte (OP1.. OP7) with the Menu Up/ Down keys, and enter the new (decimal) value. For the correct Factory Default settings, see the first table below. For more detailed information, see the second table.

Leaving the Option submenu saves the changes in the Option Byte settings. Some changes will only take effect after the set has been switched "off" and "on" with the AC power switch (cold start).

Table 8-2 Option codes OP1...OP7

Option table for quickly restoring the HERCULES to its Factory Default settings		
Model number	42PF7520D/10	42PF8520D/10
OP1	152	152
OP2	37	101
OP3	79	15
OP4	241	241
OP5	252	252
OP6	27	27
OP7	19	19
Options (can be changed only via the SAM menu)	Total decimal value for each option per model number	

How to Change Options at Bit Level

If you wish to know which features or settings of the HERCULES are changed via OP1...OP7, or if you want to change each option or feature bit by bit, use the more detailed table below.

Note: the table below contains only part of the NVM settings that can be changed. A second range of settings and features can be found in Chapter 5 of this manual, in table **NVM Default values**. The settings mentioned there can only be changed via the NVM editor. For further settings, see also the table "ADC Gain and Grey scale alignment" elsewhere in this manual.

Table 8-3 Option codes in detail, at bit level

Option byte & bit table for restoring the TV set to its original Factory Default settings via the NVM Editor in the SAM menu			
	Model number	42PF7520D/10	42PF5320D/10
OP1	**Description of feature/option to be switched ON or OFF**		
bit 7 (msb)	OP_PHILIPS_TUNER	1	1
bit 6	OP_FM_RADIO	0	0
bit 5	OP_LNA	0	0
bit 4	OP_ATS // for EU	1	1
bit 3	OP_ACI	1	1
bit 2	OP_UK_PNP	0	0
bit 1	OP_VIRGIN_MODE	0	0
bit 0 (lsb)	OP_CHINA	0	0
	Total DEC Value	152	152
	Total HEX Value	98	98
OP2			
bit 7 (msb)	OP_SC	0	0
bit 6	OP_IBEX	1	1
bit 5	OP_CHANNEL_NAMING	1	1
bit 4	OP_LTI (Lum Transcient Improvmt)	0	0
bit 3	OP_TILT	0	0
bit 2	OP_FINE_TUNING	1	1
bit 1	OP_PIP_PHILIPS_TUNER	0	0
bit 0 (lsb)	OP_HUE	1	1
	Total DEC Value	101	101
	Total HEX Value	65	65
OP3			
bit 7 (msb)	OP_EW_FUNCTION	0	0
bit 6	OP_PIXEL_PLUS	1	0
bit 5	OP_PIP_SPLITTER // temp	0	0
bit 4	OP_SPLITTER // temp	0	0
bit 3	OP_VIRTUAL_DOLBY	1	1
bit 2	OP_WIDE_SCREEN	1	1
bit 1	OP_WSSB	1	1
bit 0 (lsb)	OP_OP_ME5 // OP_ME5 - 5/6 local buttons implementation	1	1
	Total DEC Value	79	15
	Total HEX Value	4F	0F
OP4			
bit 7 (msb)	OP_LIP_SYNC	1	1
bit 6	OP_HD	1	1
bit 5	OP_ULTRA_BASS	1	1
bit 4	OP_DELTA_VOLUME	1	1
bit 3	OP_TAIWAN_KOREA	0	0
bit 2	OP_VOLUME_LIMITER	0	0
bit 1	OP_STEREO_DBX	0	0
bit 0 (lsb)	OP_STEREO_NICAM_2CS	1	1
	Total DEC Value	241	241
	Total HEX Value	F1	F1
OP5			
bit 7 (msb)	OP_AV1	1	1
bit 6	OP_AV2	1	1
bit 5	OP_AV3	1	1
bit 4	OP_CVI	1	1
bit 3	OP_SVHS2	1	1
bit 2	OP_SVHS3	1	1
bit 1	OP_HOTEL_MODE	0	0
bit 0 (lsb)	OP_SIMPLY_FACTORY=OP_BTSC_AVSTEREO	0	0
	Total DEC Value	252	252
	Total HEX Value	FC	FC
OP6			
bit 7 (msb)	OP_PERSONAL_ZAPPING	0	0
bit 6	OP_SMART_SURF	0	0
bit 5	OP_FMTRAP	0	0
bit 4	OP_COMBFILTER	1	1
bit 3	OP_ACTIVE_CONTROL	1	1
bit 2	OP_VIDEO_TEXT	0	0
bit 1	OP_LIGHT_SENSOR	1	1
bit 0 (lsb)	OP_TWIN_TEXT	1	1
	Total DEC Value	27	27
	Total HEX Value	1B	1B
OP7			
bit 7 (msb)	OP_TIME_WIN1	0	0
bit 6	OP_DVB_USB = OP_MALAY	0	0
bit 5	OP_AMBILIGHT	0	0
bit 4	OP_COLUMBUS	1	1
bit 3	OP_DUMMY6	0	0
bit 2	OP_DUMMY7	0	0
bit 1	OP_WEST_EU	1	1
bit 0 (lsb)	OP_MULTI_STANDARD_EUR	1	1
	Total DEC Value	19	19
	Total HEX Value	03	03

9. Circuit Descriptions, Abbreviation List, and IC Data Sheets

Index of this chapter:

9.1 Introduction
9.2 IBO Zapper Module
9.3 Block diagram IBO Zapper Module
9.4 PNx83xx MOJO
9.5 Front End
9.6 Back End
9.7 IBOLink Interface
9.8 Control Interface
9.9 UART Interface
9.10 Power Supply IBO Zapper Module
9.11 Abbreviation List
9.12 IC Data Sheets

9.1 Introduction

The Digital Video Broadcasting (DVB) TV sets/models discussed in this manual are a combination of a standard TV set and an IBO zapper module. For a description of the original TV sets (without an IBO zapper module), see the LC4.9E AA manual, order code 3122 785 15432. The table below shows the original models of TV sets on which the IBO zapper models are based, together with the various picture qualities globally available (the Crystal Clear version is not applicable to the TV sets discussed in this manual).

Table 9-1 TV Models and Picture Quality

IBO Zapper Model	Original TV Model	Picture quality
42PF7520D/10	42PF7320/10	Pixel Plus
42PF5520D/10	42PF5320/10	Digital Crystal Clear
N.a.	N.a.	Crystal Clear

9.2 IBO Zapper Module

The "IBO Zapper" module is meant to receive, process, and transfer Digital Video Broadcasting-Terrestrial (DVB-T) signals to the internal TV interface for audio, video, and control. The "IBO Zapper" is intended for use in combination with an analogue TV chassis.

9.3 Block diagram IBO Zapper Module

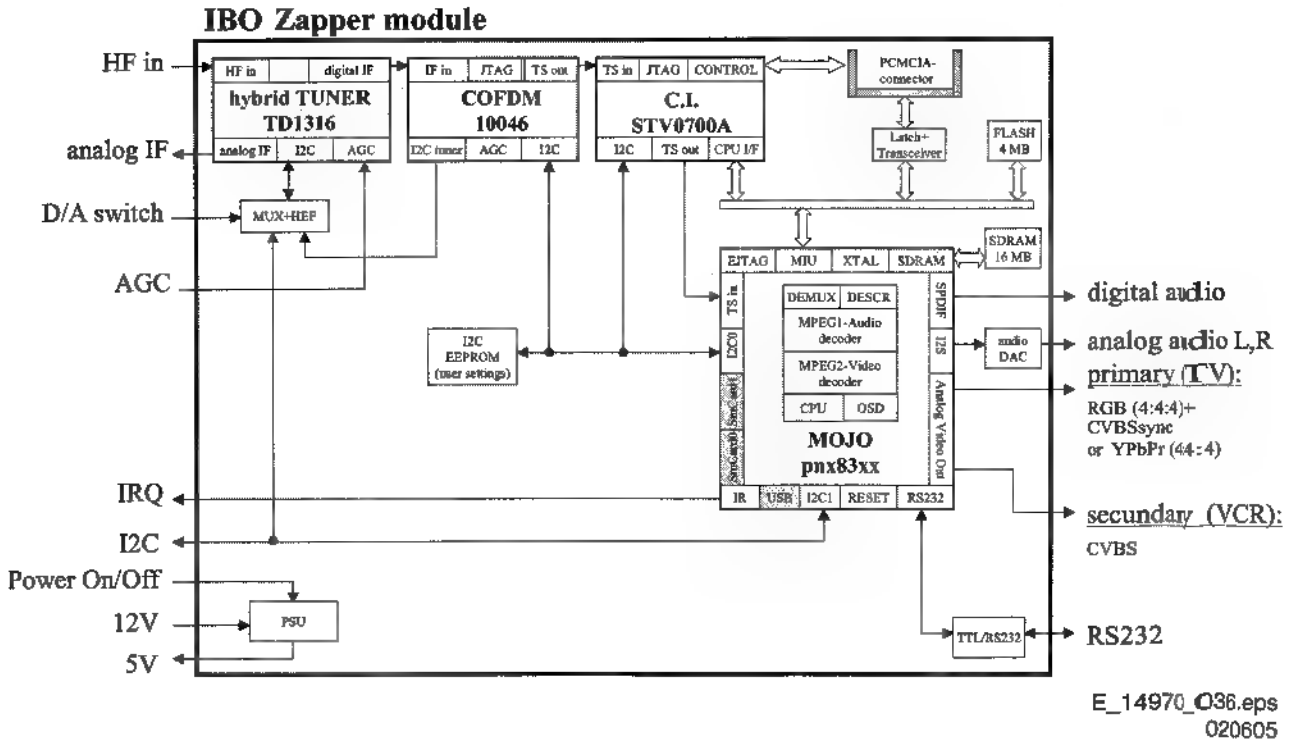

Figure 9-1 Block Diagram IBO zapper module

9.4 PNx83xx MOJO

The MOJO is a source decoder chip targeted for very low cost application in integrated digital televisions. The device contains all hardware and software to be able to decode and display MPEG2 transport streams, including:

- Descrambling
- Demultiplexing
- Audio / video decompression
- Video encoding.
- Overlay graphics provisions

Some features of the MOJO are:

- 32-bit PR1910 core operating at 120 MHz.
- 16-bit memory and peripheral interface to connect ROM, NOR Flash and various peripherals.
- Sixteen external interrupt inputs shared with PIO lines.
- Several embedded peripheral units with physical interfaces to:
  - Two UART (RS-232) data ports
  - Two I^2C master / slave transceivers
  - Two smart-card reader interfaces
  - One Integrated Conditional Access Module interface
- Supports parallel and serial transport stream input interfaces

9.5 Front End

The front end of the "IBO Zapper" module is almost identical to the "IBO+" module as used in the A10E with the exception that the Transport Streams that come from the COFDM demodulator are now fed through the PCMCIA controller first. The PCMCIA controller receives encrypted Transport Streams from the COFDM demodulator. Via the PCMCIA card, these encrypted Transport Streams are decrypted, and transported to the MOJO.

9.6 Back End

The MOJO is the main building block of the back-end of the "IBO Zapper" module. The IC decodes the MPEG-2 stream into analogue video and digital audio.

9.6.1 Transport Stream Input

The Transport Stream input is according to MPEG2 standard. In the "IBO Zapper", only 8-bit parallel is supported. The used TS names are TDA_DATA.

9.6.2 Video Outputs

The MOJO has two analogue video outputs:

- Primary (TV): YUV + RGB
- Secundary (VCR): CVBS

The primary MOJO output is used as input for the TV display and is fed either to the Hercules YUV/RGB input (pins 78/79/80), for teletext insertion purposes, or directly to the analogue Scaler input D2/C2/B2. The signal path is as follows: switch 7G09 chooses between the SCART1 input signal and the YUV/RGB output of the MOJO. The signal selected by switch 7G09 is passed on to one group of the inputs of switch 7E00. The other group of inputs of this switch is connected to the three analogue input pins of the DVI-D connector. The output signal of switch 7E00 is passed on to the Hercules input, pins 78/79/80 and to the Scaler input D2/C2/B2 via switch 7E01 in the MUX-SYNC interface. This switch chooses between the MOJO output signal and the Hercules output signal, which is used for SDTV signals (analogue terrestrial TV reception via the analogue receiving part). The Hercules output is not only used for SDTV signals, but also for MOJO output signals that were first sent to the Hercules input for e.g. teletext reinsertion purposes before they are passed on to the Scaler.
The secundary MOJO output, which delivers CVBS signals, is used for monitoring purposes or for recording via the SCART 2 output of the TV set. The signal path of the secundary MOJO output is as follows:
the CVBS/VCR signal coming from the MOJO is sent to the Hercules video switch input, pin 58, via switch 7G07. The signal then appears on one of the outputs of the Hercules video switch, pin 48, and is passed on via switches 7219 and 7G10 to pin 19 of SCART 2, which is the CVBS/monitor output.
For further details, see the manuals of the original TV sets on which the various models of IBO zappers are based.

9.6.3 Audio Outputs

The MOJO has two audio output interfaces:

- SPDIF Out: The SPDIF sound output goes directly to a connector on the back of the module.
- I2S Out: This digital sound output is fed through a DAC and the analogue L/R signals are directely fed into the Hercules.

9.7 IBOLink Interface

The IBOLink™ approach is such that the conventional TV microcontroller is re-used when digital functionality is added. In principle, the TV can still operate without the bolt-on module. The IBOLink™ software is added to the TV-set software, and is operating as a software bridge.

9.8 Control Interface

The "IBO Zapper" is connected as a slave I^2C device. The I^2C bus should be +5V tolerable and operating at 100kHz(MAX). The "IBO Zapper" module slave address is 0xE4 (similar to IBO+) but is configurable via IBOLink.

All communication from digital module to Television chassis has to be initiated via an active low hardware interrupt line from the digital module.

9.9 UART Interface

The UART interfaces (Universal Asynchronous Receiver And Transmitter) are serial interfaces, which are used to transfer data and commands between two devices.

The "IBO Zapper" system uses an UART interface for serial communication with a pc for:

- Diagnostic SW for Service or Production
- SW uploading for Service or Development

9.10 Power Supply IBO Zapper Module

The "IBO Zapper" module operates from a single 12V supply provided by the TV chassis. All other voltages that the module needs are derived from the +12V. The module has four different physical power states:

- "Off" State.
- "Passive Standby".
- "Active Standby".
- "On" State.

9.10.1 Off State

The set is powered off via the main power switch. The module is not powered.

9.10.2 Passive Standby State

The set is in standby mode. The module is in off state.

9.10.3 Active Standby State

The set is in "Semi-Standby" mode. All the circuits in the set, except the audio output and the LCD display are powered up and fully active. The set appears to be in normal standby mode for the customer.

The module is in "On" or "Logical Standby" state.

- On state. In this state the module can perform the following pre-programmed functions:
  - VCR (digital program) records
  - EPG updates
  - Over-the-air software download signaling detection and software downloads
- Logial Standby state. In this state only over-the-air software download signaling detection and software downloads can be performed.

9.10.4 On State

The set is fully functional and the module is powered up. The module is in "On" or "Logical Standby" state.

- On state. In this state ■ system functionallty is available or the module is in software downloading process.
- Logial Standby state. In this state only over-the-air software download signaling detection and software downloads can be performed.

9.11 Abbreviation List

0/6/12	SCART switch control signal on A/V board. 0 = loop through (AUX to TV), ■ = play 16:9 format, 12 = play 4:3 format
1080i	1080 visible lines, interlaced
1080p	1080 visible lines, progressive scan
2CS	2 Carrier Sound (or 2 Channel Stereo)
480I	480 visible lines, interlaced
480p	480 visible lines, progressive scan
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control; Control signal used to tune and lock to the correct frequency
AGC	Automatic gain control (feedback) signal to the tuner. This circuit ensures a constant output amplitude regardless of the input amplitude
AM	Amplitude Modulation; A "data encoding to a carrier" method, such that the carrier amplitude is proportional to the data value
AP or A/P	Asia Pacific
AR	Aspect Ratio: 4 by 3 or 16 by 9
ASD	Automatic Standard Detection
AV	External Audio Video
B-SC1-IN	Blue SCART1/EXT1 in
B-SC2-IN	Blue SCART2/EXT2 in
B-TXT	Blue TeleteXT
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz. B= VHF-band, G= UHF-band
BOCMA	Bimos one Chip Mid-end Architecture: video and chroma decoder
C-FRONT	Chrominance front input
CBA	Circuit Board Assembly (also called PCB or PWB)
CL	Constant Level: audio output to connect with an external amplifier
CLUT	Colour Look-Up Table
COLUMBUS	COLour LUMinance Baseband Universal Subsystem IC performing noise reduction and 2D/3D comb filtering
ComPair	Computer aided rePair. A tool for diagnosing a TV through a PC controlled interface
CSM	Customer Service Mode
CVBS	Composite Video and Blanking Signal; A single video signal that contains luminance, colour, and timing information
CVBS-EXT	CVBS signal from external source (VCR, VCD, etc.)
CVBS-INT	CVBS signal from internal Tuner
CVBS-MON	CVBS monitor signal
CVBS-TER-OUT	CVBS TERrestrial OUTput signal
DAC	Digital to Analogue Converter
DBE	Dynamic Bass Enhancement: extra low frequency amplification
DFU	Directions For Use: Owner's manual
DNR	Dynamic Noise Reduction / Digital Noise Reduction; Noise reduction feature of the set
DRAM	Dynamic RAM; dynamically refreshed RAM
DSP	Digital Signal Processing
DST	Dealer Service Tool; special remote control designed for dealers to enter

	e.g. service mode (a DST-emulator is available in ComPair)
DTS	Digital Theatre System; A multi-channel surround sound format, similar to Dolby Digital
DVB	Digital Video Broadcast; A method of transmitting digital audio and video, based on MPEG2
DVB-T	DVB-Terrestrial; HDTV standard for the EU
DVD	Digital Versatile Disc
EEPROM	Electrically Erasable and Programmable Read Only Memory
EPG	Electronic Program Guide: system used by broadcasters to transmit TV guide information (= NexTView)
EU	Europe
EXT	EXTernal (source), entering the set by SCART or by cinches (jacks)
FBL	Fast BLanking; DC signal accompanying RGB signals. To blank the video signal when it is returning from the right side of the screen to the left side. The video level is brought down below the black video level
FBL-SC1-IN	Fast blanking signal for SCART1 in
FBL-SC2-IN	Fast blanking signal for SCART2 In
FBL-TXT	Fast Blanking Teletext
FM	Field Memory; A memory chip that is capable of storing one or more TV picture fields / Frequency Modulation; A technique that sends data as frequency variations of a carrier signal
FMR	Radio receiver that can receive the FM Band 87.5 - 108 MHz
FRC	Frame Rate Converter
FRONT-C	Front input chrominance (SVHS)
FRONT-DETECT	Control line for detection of headphone insertion, Service Mode jumper, power failure detection
FRONT-Y_CVBS	Front input luminance or CVBS (SVHS)
G-SC1-IN	Green SCART1/EXT1 in
G-SC2-IN	Green SCART2/EXT2 In
G-TXT	Green teletext
H	H_sync to the module
HA	Horizontal Acquisition; horizontal sync pulse
HD	High Definition
HP	HeadPhone
I	Monochrome TV system. Sound carrier distance is 6.0 MHz. VHF- and UHF-band
I^2C	Integrated IC bus
I^2S	Integrated IC Sound bus
IC	Integrated Circuit
IF	Intermediate Frequency
Interlaced	Scan mode where two fields are used to form one frame. Each field contains half the number of the total amount of lines. The fields are written in "pairs", causing line flicker.
IR	Infra Red
IRQ	Interrupt ReQuest
Last Status	The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according to the customer's preferences
LATAM	LATin AMerica
LC04	Philips chassis name for LCD TV 2004 project
LCD	Liquid Crystal Display
LED	Light Emitting Diode; A semiconductor diode that emits light when a current is passed through it
LINE-DRIVE	Horizontal (line) deflection drive signal (for the Line transistor)
L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
LS	LoudSpeaker
LVDS	Low Voltage Differential Signalling, data transmission system for high speed and low EMI communication.
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz. M= 525 lines @ 60 Hz, N= 625 lines @ 50 Hz
MOSFET	Metal Oxide Semiconductor Field Effect Transistor
MPEG	Motion Pictures Experts Group. An ISO/IEC body that has given its name to an image compressing scheme for moving video
MSP	Multi-standard Sound Processor: ITT sound decoder
MUTE	MUTE Line
NC	Not Connected
NICAM	Near Instantaneously Companded Audio Multiplexing; This is a digital sound system, mainly used in Europe
NTSC	National Television Standard Committee. Colour system used mainly in North America and Japan. Colour carrier NTSC M/N = 3.579545 MHz, NTSC 4.43 = 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
NVM	Non Volatile Memory; IC containing data such as alignment values, preset stations
O/C	Open Circuit
ON/OFF LED	On/Off control signal for the LED
OSD	On Screen Display
PAL	Phase Alternating Line. Colour system used mainly in Western Europe (colour carrier = 4.433619 MHz) and South America (colour carrier PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)
PC	Personal Computer
PCB	Printed Circuit Board (or PWB)
PIG	Picture In Graphic
PIP	Picture In Picture
PLL	Phase Locked Loop. Used, for example, in FST tuning systems. The customer can directly provide the desired frequency
Progressive Scan	Scan mode where all scan lines are displayed in one frame at the same time, creating a double vertical resolution.
PWB	Printed Wiring Board (also called PCB or CBA)
RAM	Random Access Memory
RC	Remote Control transmitter
RC5 or 6	Remote Control system 5 or 6, the signal from the remote control receiver
RGB	Red, Green, and Blue colour space; The primary colour signals for TV. By mixing levels of R, G, and B, all colours (Y/C) are reproduced
RGBHV	Red, Green, Blue, Horizontal sync, and Vertical sync
ROM	Read Only Memory
SAM	Service Alignment Mode
SC	SandCastle: two-level pulse derived from sync signals

SC-IN	SCART In
SC-OUT	SCART out
S/C	Short Circuit
SCART	Syndicat des Constructeurs d'Appareils Radiorécepteurs et Téléviseurs; This is a 21-pin connector used in EU, that carries various audio, video, and control signals (it is also called Péritel connector)
SCL	Serial CLock Signal on I^2C bus
SD	Standard Definition
SDA	Serial DAta Signal on I^2C bus
SDRAM	Synchronous DRAM
SECAM	SÉquence Couleur Avec Mémoire; Colour system mainly used in France and East Europe. The chroma is FM modulated and the R-Y and B-Y signals are transmitted line sequentially. Colour carriers= 4.406250 MHz and 4.250000 MHz
SIF	Sound Intermediate Frequency
SMPS	Switched Mode Power Supply
SND	SouND
SNDL-SC1-IN	Sound left SCART1 in
SNDL-SC1-OUT	Sound left SCART1 out
SNDL-SC2-IN	Sound left SCART2 in
SNDL-SC2-OUT	Sound left SCART2 out
SNDR-SC1-IN	Sound right SCART1 in
SNDR-SC1-OUT	Sound right SCART1 out
SNDR-SC2-IN	Sound right SCART2 out
SNDR-SC2-OUT	Sound right SCART2 out
SOPS	Self Oscillating Power Supply
S/PDIF	Sony Philips Digital InterFace; This is a consumer interface used to transfer digital audio
SRAM	Static RAM
STBY	STandBY
SVHS	Super Video Home System
SW	Software or Subwoofer or Switch
THD	Total Harmonic Distortion
TXT	Teletext; TXT is a digital addition to analogue TV signals that contain textual and graphical information (25 rows x 40 columns). The information is transmitted within the first 25 lines during the Vertical Blank Interval (VBI)
uP	Microprocessor
VA	Vertical Acquisition
VL	Variable Level out: processed audio output towards external amplifier
VCR	Video Cassette Recorder
VGA	Video Graphics Array; 640x480 (4:3)
WD	Watch Dog
WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
XTAL	Quartz crystal
Y	Luminance signal
Y/C	Y consists of luminance signal, blanking level and sync; C consists of chroma (colour) signal
YPbPr	This is a scaled version of the YUV colour space. Y= Luminance, Pb/Pr= Colour difference signals B-Y and R-Y, other amplitudes w.r.t. to YUV
YUV	Colour space used by the NTSC and PAL video systems. Y ■ the luminance and U/V are the colour difference signals

9.12 IC Data Sheets

This section shows the internal block diagrams and pin layouts of ICs that are drawn as "black boxes" in the electrical diagrams (with the exception of "memory" and "logic" ICs).

9.12.1 Diagram K1, PNx83xx (IC7100)

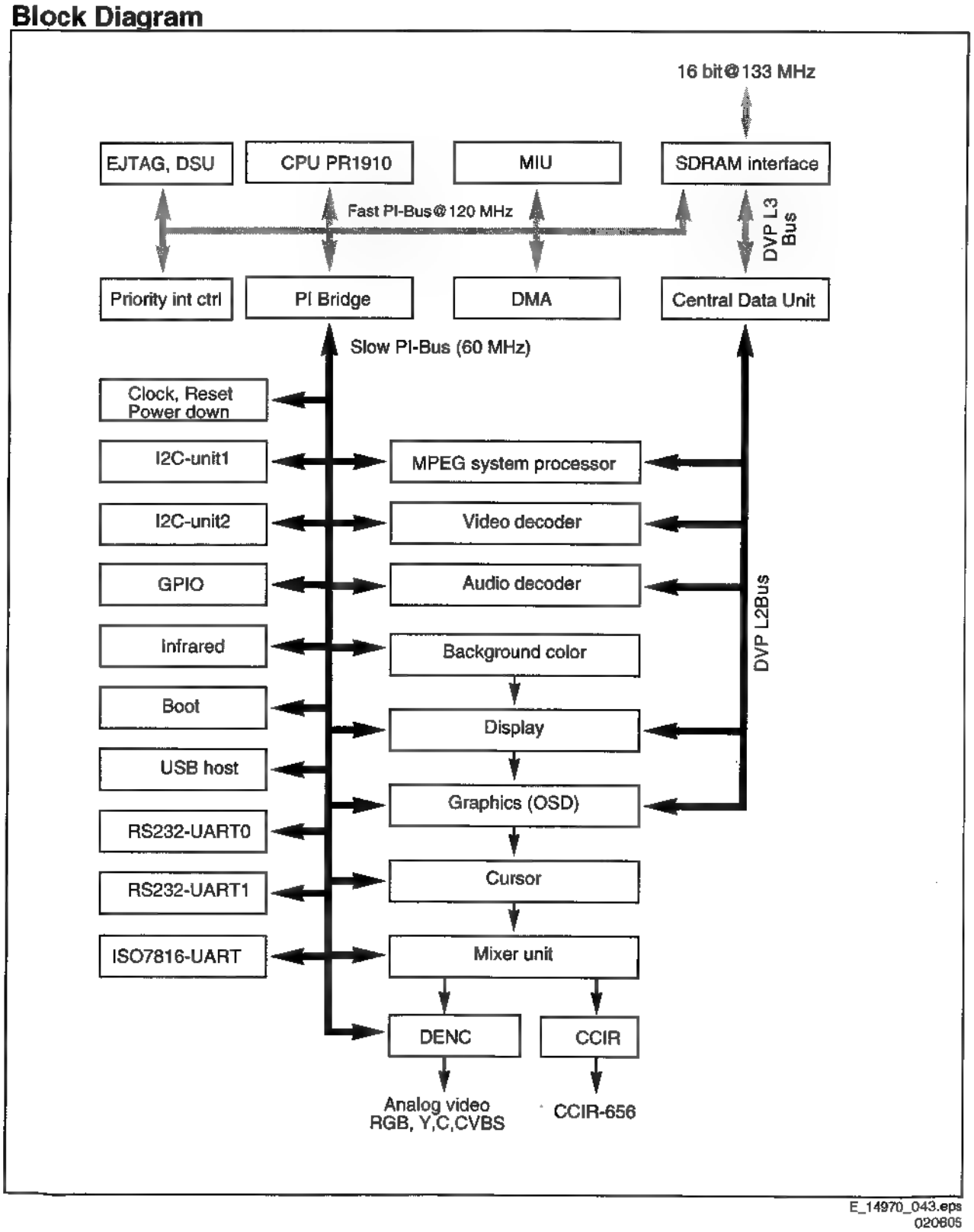

Figure 9-2 PNx831x architecture and data paths

9.12.2 Diagram K6, TDA10046 (IC7600)

Block Diagram

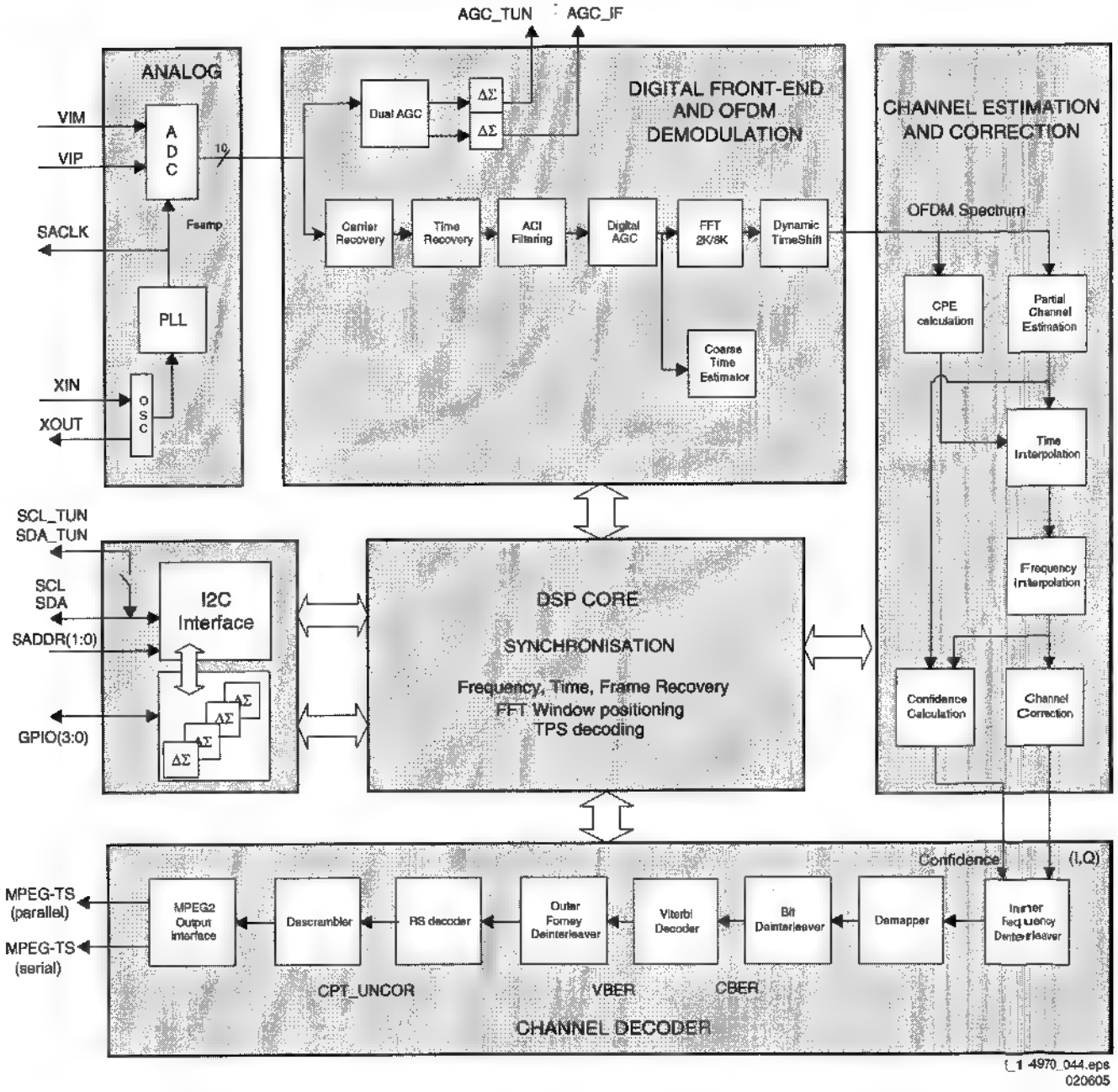

Figure 9-3 Internal blockdiagram TDA10046

10. Spare Parts List

Set Level

Various

1004	8204 000 78181	PDP S42SD-YD07
1004▲	9322 224 88682	PDP PDP42V7A062
1012	3104 328 39571	LED panel LC04SD2
8102	3104 311 03601	Cable 7p/400/7p
8102	3104 311 07241	Cable 7P/1000/7P
8103	3104 311 06511	Cable 10p/280/10p
8103	3104 311 07391	Cable 10P/220/10P
8120▲	3104 311 07421	Cable 6P/680/6P
8146	3104 311 08621	Cable 11P/220/11P
8150	3104 311 08831	Cable 31P/300/31P
8150	3104 311 10493	Cable 31P/220/31P
8152▲	3104 311 09921	Cable 9P/680/9P
8900▲	3104 311 07911	Cable ring/180/ring

Set Level

Various

1014	3104 328 39561	Side control LC04SD2
1116	3104 328 40501	Side I/O Assy LC04SD2
8101	3104 311 10751	Cable 3P/1K7/3P
8136	3104 311 10733	Cable 11P/1K/11P
8735	3104 311 10601	Cable 2P3/1400/POSI
8736	3104 311 10591	Cable 2P3/1000/POSI

5213	2441 257 30020	Loudspeaker 8Ω 10W
5214	2441 257 30020	Loudspeaker 8Ω 10W

Power Supply Unit [A]

Various

1002	4822 267 10618	Connector 7p
1004	2422 086 00676	Fuse 2A T 250V
1082	2422 086 00677	Fuse 2.5A T 250V
1083	2422 086 00677	Fuse 2.5A T 250V
1084	2422 086 10849	Fuse 1A F 250V
1110	2422 086 00678	Fuse 5A T 250V
1200	2422 086 00676	Fuse 2A T 250V
1260	4822 252 51186	Fuse 2A
1400	4822 070 36302	Fuse 6.3A
1402	4822 252 60151	Surge protect
1450	4822 280 10382	SDT-SS-109DM
1460	4822 280 10382	SDT-SS-109DM
1M03	2422 025 10771	Connector 10p m
1M05	2422 025 16374	Connector 2p m
1M10	2422 025 09406	Connector 4p m
1M46	2422 025 10655	Connector 11p m

2000	2252 811 95017	470pF 10% 250V
2001	2222 338 22474	470nF 20% 275V
2005	2238 867 18101	100pF 1% 50V 0603
2006	2020 552 96618	1nF 10% 50V 0402
2007	2238 586 59812	100nF 20% 50V 0603
2008	5322 126 11583	10nF 10% 50V 0603
2010	5322 126 11583	10nF 10% 50V 0603
2011	2222 375 24153	15nF 5% 1kV
2012	4822 126 11254	330pF 10% 2kV
2013	4822 126 11254	330pF 10% 2kV
2014	4822 126 13862	1.5nF 10% 2kV
2015	5322 126 11583	10nF 10% 50V 0603
2017	2222 375 24153	15nF 5% 1kV
2018	2238 867 18101	100pF 1% 50V 0603
2019	2252 811 95017	470pF 10% 250V
2020	2020 024 90737	3300µF 20% 100V
2021	2020 024 90737	3300µF 20% 100V
2022	2020 021 91354	1000µF 20% 50V
2023	2222 580 15649	100nF 10% 50V 0805
2024	3198 035 03320	3.3nF 5% 50V 0402
2025	4822 124 12084	1µF 20% 50V
2026	2020 552 96623	2.2nF 10% 50V 0402
2027	2020 552 96631	15nF 10% 16V 0402
2028	2238 930 11541	220pF 5% 200V
2029	2238 930 11541	220pF 5% 200V
2030	2238 586 59812	100nF 20% 50V 0603
2031	2020 552 96628	10nF 10% 16V 0402
2032	2238 586 15641	22nF 10% 50V 0603
2033	2238 586 59812	100nF 20% 50V 0603
2034	4822 126 14525	47pF 5% 1kV
2035	2020 552 96618	1nF 10% 50V 0402
2036	2238 586 15641	22nF 10% 50V 0603
2037	4822 126 14525	47pF 5% 1kV
2038	2020 552 96618	1nF 10% 50V 0402
2039	2020 552 96623	2.2nF 10% 50V 0402
2040	3198 034 02790	47pF 1% 50V 0402
2041	2238 869 15101	100pF 5% 50V 0402
2042	3198 035 03310	330pF 5% 50V 0402
2043	4822 124 12084	1µF 20% 50V
2044	2238 930 11541	220pF 5% 200V
2045	2238 930 11541	220pF 5% 200V
2046	2252 568 08305	33pF 5% 500V
2047	2238 586 59812	100nF 20% 50V 0603
2048	2020 552 96683	220nF 10% 50V
2049	2238 867 18101	100pF 1% 50V 0603
2050	2238 586 15641	22nF 10% 50V 0603
2051	4822 122 33177	10nF 20% 50V
2052	4822 124 12056	1000µF 20% 35V
2053	2022 031 00308	22µF 20% 35V
2054	2020 552 00216	220pF 5% 50V 0402
2055	2020 552 96621	1.5nF 10% 50V 0402
2056	2020 552 00216	220pF 5% 50V 0402
2057	2020 552 96621	1.5nF 10% 50V 0402
2058	4822 124 41828	1µF 20% 250V
2059	2238 586 59812	100nF 20% 50V 0603
2060	2020 552 96683	220nF 10% 50V
2061	2238 586 59812	100nF 20% 50V 0603
2070	2020 552 96618	1nF 10% 50V 0402
2071	2020 552 96618	1nF 10% 50V 0402
2090	2020 021 91729	4.7µF 20% 35V
2112	2020 552 96618	1nF 10% 50V 0402
2113	4822 124 12379	220µF 25V
2114	2020 552 96683	220nF 10% 50V
2118	4822 126 13449	1nF 10% 2kV
2121	2020 024 90736	2200µF 20% 100V
2122	4822 121 51319	1µF 10% 63V
2123	3198 035 03320	3.3nF 5% 50V 0402
2126	2238 586 59812	100nF 20% 50V 0603
2133	4822 124 81151	22µF 50V
2203	2238 586 59812	100nF 20% 50V 0603
2205	2020 021 91729	4.7µF 20% 35V
2210	4822 124 80151	47µF 16V
2211	3198 035 04710	470pF 50V 0402
2212	2020 552 96326	220nF 10% 16V
2213	3198 035 03320	3.3nF 5% 50V 0402
2214	3198 035 03320	3.3nF 5% 50V 0402
2215	3198 035 04710	470pF 50V 0402
2218	2222 375 90141	3.3nF 1.6kV 5%
2222	2238 869 15101	100pF 5% 50V 0402
2223	2238 869 15101	100pF 5% 50V 0402
2225	2020 021 91551	2200µF 20% 25V
2226	2238 586 59812	100nF 20% 50V 0603
2227	2238 869 15101	100pF 5% 50V 0402
2229	2020 021 00036	470µF 20% 16V
2230	2020 021 00036	470µF 20% 16V
2231	4822 124 80151	47µF 16V
2232	2238 869 15101	100pF 5% 50V 0402
2234	2022 552 05679	1µF 10% 16V 0805
2236	4822 124 23002	10µF 16V
2237	4822 124 23002	10µF 16V
2263	2222 861 15272	2.7nF 5% 50V 0805
2264	4822 126 14583	470nF 10% 16V 0805
2265	3198 035 03310	330pF 5% 50V 0402
2266	2020 021 91729	4.7µF 20% 35V
2267	5322 122 32531	100pF 5% 50V
2268	2020 552 96683	220nF 10% 50V
2269	4822 123 14025	2200µF 20% 16V
2270	4822 124 40433	47µF 20% 25V
2273	2238 586 59812	100nF 20% 50V 0603
2274	2020 552 96628	10nF 10% 16V 0402
2290	5322 126 11583	10nF 10% 50V 0603
2291	3198 035 04710	470pF 50V 0402
2293	3198 035 04710	470pF 50V 0402
2295	3198 035 04710	470pF 50V 0402
2296	3198 035 04710	470pF 50V 0402
2304	2020 552 96618	1nF 10% 50V 0402
2305	2238 586 59812	100nF 20% 50V 0603
2306	2238 586 59812	100nF 20% 50V 0603
2322	2238 586 59812	100nF 20% 50V 0603
2324	2238 586 59812	100nF 20% 50V 0603
2350	4822 124 12095	100µF 20% 16V
2352	2238 586 59812	100nF 20% 50V 0603
2364	2238 586 59812	100nF 20% 50V 0603
2376	2238 586 59812	100nF 20% 50V 0603
2377	2238 586 59812	100nF 20% 50V 0603
2381	2238 586 59812	100nF 20% 50V 0603
2385	2020 552 96628	10nF 10% 16V 0402
2386	2020 552 96628	10nF 10% 16V 0402
2387	4822 124 12095	100µF 20% 16V
2388	2020 552 96628	10nF 10% 16V 0402
2397	4822 124 12095	100µF 20% 16V
2398	4822 124 23002	10µF 16V
2400	2222 338 22474	470nF 20% 275V
2401	2222 338 22474	470nF 20% 275V
2404	4822 126 14525	47pF 5% 1kV
2405	2252 811 95017	470pF 10% 250V
2406	4822 126 14525	47pF 5% 1kV
2407	2252 811 95017	470pF 10% 250V
2465	4822 124 12095	100µF 20% 16V
2502	2238 869 15101	100pF 5% 50V 0402
2503	2020 024 90708	47µF 400V 20%
2504	2020 552 96618	1nF 10% 50V 0402
2507	2238 869 15101	100pF 5% 50V 0402
2508	4822 124 12095	100µF 20% 16V
2509	2238 869 15101	100pF 5% 50V 0402
2510	2020 021 91506	1000µF 20% 16V
2511	2238 586 59812	100nF 20% 50V 0603
2512	2238 586 59812	100nF 20% 50V 0603
2513	2222 580 15649	100nF 10% 50V 0805
2532	4822 124 12095	100µF 20% 16V
2533	4822 124 12095	100µF 20% 16V
2534	2022 552 05679	1µF 10% 16V 0805
2540	4822 124 12095	100µF 20% 16V
2541	4822 124 12095	100µF 20% 16V
2542	2238 586 59812	100nF 20% 50V 0603
2600	4822 122 33799	1nF 10% 1kV
2601	4822 122 33799	1nF 10% 1kV
2602	2020 552 96623	2.2nF 10% 50V 0402
2603	2222 383 90136	1µF 5% 400V
2605	2222 383 90136	1µF 5% 400V
2608	2020 552 96618	1nF 10% 50V 0402
2610	4822 121 70584	1.8nF 5% 2kV
2611	4822 126 12263	220pF 10% 2kV
2612	2020 552 96618	1nF 10% 50V 0402
2614	2020 552 96623	2.2nF 10% 50V 0402
2616	4822 124 12415	220µF 20% 400V
2617	4822 124 12415	220µF 20% 400V
2640	3198 035 04710	470pF 50V 0402
2642	2020 552 96618	1nF 10% 50V 0402
2651	2020 552 96628	10nF 10% 16V 0402
2653	3198 035 06810	680pF 5% 50V 0402
2654	4822 124 80151	47µF 16V
2655	2022 552 05679	1µF 10% 16V 0805
2656	2222 580 15649	100nF 10% 50V 0805
2660	4822 126 13881	470pF 5% 50V
2661	2020 552 96618	1nF 10% 50V 0402
2662	4822 124 80061	1000µF 20% 25V
2663	4822 121 51319	1µF 10% 63V
2664	4822 124 40255	100µF 20% 63V
2665	4822 126 13881	470pF 5% 50V
2666	2020 552 96793	4.7nF 10% 50V 0402
2670	2238 586 59812	100nF 20% 50V 0603
2671	2238 586 59812	100nF 20% 50V 0603
2672	2222 580 15649	100nF 10% 50V 0805
2673	2020 558 90621	10nF 630V
2674	2020 558 90621	10nF 630V
2675	2020 558 90621	10nF 630V
2676	2020 558 90621	10nF 630V
2677	2020 552 96623	2.2nF 10% 50V 0402
2690	2020 552 96618	1nF 10% 50V 0402

3001	4822 051 30471	47Ω 5% 0.062W
3002	4822 051 30471	47Ω 5% 0.062W
3003	4822 117 11297	100kΩ 5% 0.1W
3004	3198 031 01530	15kΩ 5% 0.01W 0402
3005	3198 031 02730	27kΩ 5% 0402
3006	4822 117 13606	10kΩ 5% 0.01W 0402
3007	3198 031 04720	4.7kΩ 5% 0402
3008	4822 051 30102	1kΩ 5% 0.062W
3009	4822 051 30102	1kΩ 5% 0.062W
3010	3198 031 01530	15kΩ 5% 0.01W 0402
3011	4822 051 30561	560Ω 5% 0.062W
3012	3198 031 04720	4.7kΩ 5% 0402
3013	4822 117 13606	10kΩ 5% 0.01W 0402
3014	4822 050 23309	33Ω 1% 0,6W
3015	4822 050 21009	10Ω 1% 0.6W
3016	4822 051 10102	1kΩ 2% 0.25W
3017	4822 050 23309	33Ω 1% 0,6W
3018	4822 050 21009	10Ω 1% 0.6W
3019	4822 051 10102	1kΩ 2% 0.25W
3020	3198 031 05630	56kΩ 5% 0402
3022	4822 051 30681	680Ω 5% 0.062W
3023	3198 031 04730	47Ω 5% 0402

3024	4822 117 12306	150kΩ 1% 0.1W
3025	2322 706 71802	1.8kΩ 5% 0402
3026	4822 051 20684	680kΩ 5% 0.1W
3027	3198 031 04730	47Ω 5% 0402
3028	2322 704 67502	7.5kΩ 1% 0.5W
3029	4822 051 30123	12kΩ 5% 0.1W
3030	3198 031 01830	18kΩ 5% 0.01W 0402
3031	2322 706 71003	10kΩ 5% 0402
3032	2322 706 71003	10kΩ 5% 0402
3033	2322 705 70184	180Ω 5% 0402
3034	4822 117 13596	220Ω 5% 0.01W 0402
3035	4822 051 20684	680kΩ 5% 0.1W
3036	2122 612 00068	NTC 1Ω 20% 6W
3037	4822 117 13606	10kΩ 5% 0.01W 0402
3038	4822 117 11297	100kΩ 5% 0.1W
3039	4822 051 30105	1MΩ 5% 0.062W
3040	4822 117 10837	100kΩ 1% 0.1W
3041	4822 117 13603	33kΩ 5% 0402
3042	4822 051 30471	47Ω 5% 0.062W
3043	3198 031 04720	4.7kΩ 5% 0402
3044	4822 051 30102	1kΩ 5% 0.062W
3045	4822 051 30102	1kΩ 5% 0.062W
3046	4822 053 20565	5.6MΩ 5% 0.25W
3047	3198 031 01540	150kΩ 5% 0402
3048	3198 031 04720	4.7kΩ 5% 0402
3049	3198 031 01230	12kΩ 5% 0402
3050	4822 052 10398	3.9Ω 5% 0.33W
3051	4822 051 20822	8.2kΩ 5% 0.1W
3052	4822 117 12306	150kΩ 1% 0.1W
3053	2322 662 93131	PTC 10Ω
3054	4822 117 13543	470Ω 5% 0402
3055	4822 117 10833	10kΩ 1% 0.1W
3056	4822 051 30331	330Ω 5% 0.062W
3057	4822 051 30101	100Ω 5% 0.062W
3058	4822 051 20105	1MΩ 5% 0.1W
3059	3198 031 05630	56kΩ 5% 0402
3060	4822 050 22204	220kΩ 1% 0.6W
3061	3198 031 01830	18kΩ 5% 0.01W 0402
3062	4822 117 13548	1kΩ 5% 0402
3063	4822 117 13548	1kΩ 5% 0402
3064	4822 117 13606	10kΩ 5% 0.01W 0402
3065	4822 117 13548	1kΩ 5% 0402
3066	4822 117 13606	10kΩ 5% 0.01W 0402
3067	3198 031 01530	15kΩ 5% 0.01W 0402
3068	4822 117 13606	10kΩ 5% 0.01W 0402
3069	4822 051 30471	47Ω 5% 0.062W
3070	4822 051 30103	10kΩ 5% 0.062W
3071	3198 031 04730	47Ω 5% 0402
3073	3198 031 01050	1MΩ 5% 0402
3074	3198 031 01530	15kΩ 5% 0.01W 0402
3075	4822 051 20105	1MΩ 5% 0.1W
3076	4822 117 11297	100kΩ 5% 0.1W
3077	4822 051 20105	1MΩ 5% 0.1W
3078	4822 117 11297	100kΩ 5% 0.1W
3079	4822 051 30681	680Ω 5% 0.062W
3080	4822 051 30681	680Ω 5% 0.062W
3081	3198 031 01520	1.2kΩ 5% 0.01W 0402
3082	3198 031 01520	1.2kΩ 5% 0.01W 0402
3083	2312 915 11002	1kΩ 1% 0.5W
3084	4822 117 13606	10kΩ 5% 0.01W 0402
3085	3198 031 04730	47Ω 5% 0402
3086	3198 031 04730	47Ω 5% 0402
3087	3198 031 04730	47Ω 5% 0402
3088	3198 031 04730	47Ω 5% 0402
3089	4822 117 13606	10kΩ 5% 0.01W 0402
3090	4822 117 13545	100Ω 1% 0402
3091	4822 051 30102	1kΩ 5% 0.062W
3092	4822 051 10102	1kΩ 2% 0.25W
3093	4822 117 13548	1kΩ 5% 0402
3094	4822 051 10102	1kΩ 2% 0.25W
3095	4822 117 13543	470Ω 5% 0402
3096	3198 031 05620	5.6kΩ 5% 0.01W 0402
3097	3198 031 08210	820Ω 5% 0.5W
3098	4822 117 13548	1kΩ 5% 0402
3100	2322 706 71002	1kΩ 1% 0402
3101	2322 706 71002	1kΩ 1% 0402
3102	2322 706 71002	1kΩ 1% 0402
3103	2322 706 71002	1kΩ 1% 0402
3104	2322 706 71002	1kΩ 1% 0402
3106	4822 117 12955	2.7kΩ 1% 0.1W 0805
3107	4822 117 12955	2.7kΩ 1% 0.1W 0805
3108	4822 117 12955	2.7kΩ 1% 0.1W 0805
3109	4822 117 12955	2.7kΩ 1% 0.1W 0805
3110	4822 117 13548	1kΩ 5% 0402
3112	4822 051 30102	1kΩ 5% 0.062W
3114	2322 705 70564	560kΩ 5% 0402
3115	3198 031 02240	220kΩ 5% 0.1W 0402
3116	4822 117 13548	1kΩ 5% 0402
3117	4822 117 13606	10kΩ 5% 0.01W 0402
3118	2122 118 06084	0.051Ω 5% 1W 2512
3120	3198 021 31820	1.8kΩ 5% 0.062W 0603
3121	3198 031 04730	47Ω 5% 0402
3123	4822 117 10965	18kΩ 1% 0.1W
3124	2322 704 67502	7.5kΩ 1% 0.5W
3125	2322 704 67502	7.5kΩ 1% 0.5W
3126	2322 706 72202	2.2kΩ 5% 0402
3128	4822 117 13603	33kΩ 5% 0402
3130	4822 051 30123	12kΩ 5% 0.1W
3131	2322 706 71003	10kΩ 5% 0402
3132	4822 117 13596	220Ω 5% 0.01W 0402
3133	4822 051 30101	100Ω 5% 0.062W
3134	4822 051 30681	680Ω 5% 0.062W
3135	3198 031 04730	47Ω 5% 0402
3136	3198 031 04730	47Ω 5% 0402
3143	4822 053 12472	4.7kΩ 5% 3W
3147	2322 706 71003	10kΩ 5% 0402
3149	4822 052 10478	4.7Ω 5% 0.33W
3150	3198 031 01050	1MΩ 5% 0402
3200	4822 051 20334	330kΩ 5% 0.1W
3202	4822 051 30479	47Ω 5% 0.062W
3203	4822 051 30101	100Ω 5% 0.062W
3204	4822 117 11297	100kΩ 5% 0.1W
3205	3198 031 01540	150kΩ 5% 0402
3206	4822 117 12955	2.7kΩ 1% 0.1W 0805
3207	4822 117 12955	2.7kΩ 1% 0.1W 0805
3208	4822 117 12955	2.7kΩ 1% 0.1W 0805
3209	4822 117 12955	2.7kΩ 1% 0.1W 0805
3210	2322 706 71002	1kΩ 1% 0402
3212	4822 051 30102	1kΩ 5% 0.062W
3213	4822 117 13603	33kΩ 5% 0402
3214	2322 705 70124	120kΩ 5% 0402
3215	2322 705 70274	270kΩ 5% 0402
3216	4822 117 13548	1kΩ 5% 0402
3217	4822 117 13606	10kΩ 5% 0.01W 0402
3218	2122 118 06084	0.051Ω 5% 1W 2512
3219	4822 117 13606	10kΩ 5% 0.01W 0402
3220	4822 050 23309	33Ω 1% 0,6W
3224	2322 706 71203	12kΩ 5% 0402
3225	2322 706 71003	10kΩ 5% 0402
3226	4822 117 13606	10kΩ 5% 0.01W 0402
3228	4822 051 30151	150Ω 5% 0.062W
3262	2322 706 71003	10kΩ 5% 0402
3263	2322 706 71003	10kΩ 5% 0402
3265	4822 117 13548	1kΩ 5% 0402
3268	4822 117 13548	1kΩ 5% 0402
3269	3198 031 02720	2.7kΩ 5% 0.01W 0402
3292	4822 051 30561	560Ω 5% 0.062W
3300	2322 706 72204	220kΩ 5% 0402
3301	2322 706 72204	220kΩ 5% 0402
3304	4822 051 30102	1kΩ 5% 0.062W
3306	2322 706 71003	10kΩ 5% 0402
3307	5322 117 13028	12kΩ 1% 0.063W 0603
3308	4822 051 30102	1kΩ 5% 0.062W
3311	4822 117 13579	220kΩ 1% 0.1W 0805
3312	4822 051 30102	1kΩ 5% 0.062W
3313	2322 704 67502	7.5kΩ 1% 0.5W
3317	2322 704 67502	7.5kΩ 1% 0.5W
3320	2322 706 71003	10kΩ 5% 0402
3321	4822 051 30102	1kΩ 5% 0.062W
3322	2322 706 73902	3.9kΩ 1% 0402
3323	2322 706 71003	10kΩ 5% 0402
3324	4822 051 30102	1kΩ 5% 0.062W
3325	4822 051 30471	47Ω 5% 0.062W
3326	3198 031 04720	4.7kΩ 5% 0402
3327	4822 117 13606	10kΩ 5% 0.01W 0402
3328	4822 051 30103	10kΩ 5% 0.062W
3332	2322 706 76803	68kΩ 5% 0402
3333	4822 051 30102	1kΩ 5% 0.062W
3334	2322 706 71003	10kΩ 5% 0402
3335	2322 706 71503	15kΩ 5% 1W 0402
3340	4822 051 30102	1kΩ 5% 0.062W
3341	4822 117 13606	10kΩ 5% 0.01W 0402
3342	4822 051 30103	10kΩ 5% 0.062W
3343	4822 051 30102	1kΩ 5% 0.062W
3344	4822 051 30102	1kΩ 5% 0.062W
3345	4822 117 13548	1kΩ 5% 0402
3346	4822 117 13548	1kΩ 5% 0402
3347	4822 051 30331	330Ω 5% 0.062W
3348	4822 051 30331	330Ω 5% 0.062W
3349	4822 051 30102	1kΩ 5% 0.062W
3350	4822 051 30472	4.7Ω 5% 0.062W
3351	4822 051 30103	10kΩ 5% 0.062W
3352	4822 051 30103	10kΩ 5% 0.062W
3353	4822 117 13606	10kΩ 5% 0.01W 0402
3354	3198 031 04720	4.7kΩ 5% 0402
3358	4822 051 30222	2.2kΩ 5% 0.062W
3359	3198 031 05620	5.6kΩ 5% 0.01W 0402
3360	3198 031 01220	1.2kΩ 5% 0.01W 0402
3361	3198 031 04720	4.7kΩ 5% 0402
3362	3198 031 02720	2.7kΩ 5% 0.01W 0402
3363	4822 051 30102	1kΩ 5% 0.062W
3364	4822 051 30272	2.7kΩ 5% 0.062W
3366	4822 117 13606	10kΩ 5% 0.01W 0402
3367	4822 051 30103	10kΩ 5% 0.062W
3369	3198 031 04720	4.7kΩ 5% 0402
3370	2322 675 20907	PTC 470Ω 50% 25V 0805
3373	3198 031 04720	4.7kΩ 5% 0402
3374	3198 031 04730	47Ω 5% 0402
3376	3198 031 04730	47Ω 5% 0402
3377	3198 031 04720	4.7kΩ 5% 0402
3378	4822 117 13606	10kΩ 5% 0.01W 0402
3380	3198 031 04730	47Ω 5% 0402
3381	3198 031 04730	47Ω 5% 0402
3383	4822 117 13606	10kΩ 5% 0.01W 0402
3384	4822 117 13606	10kΩ 5% 0.01W 0402
3386	4822 051 30101	100Ω 5% 0.062W
3388	4822 051 30102	1kΩ 5% 0.062W
3389	4822 051 30102	1kΩ 5% 0.062W
3390	4822 117 13548	1kΩ 5% 0402
3391	4822 117 13606	10kΩ 5% 0.01W 0402
3392	3198 031 04730	47Ω 5% 0402
3393	3198 031 04730	47Ω 5% 0402
3394	3198 031 04730	47Ω 5% 0402
3395	3198 031 01540	150kΩ 5% 0402
3397	3198 031 04730	47Ω 5% 0402
3398	3198 031 04730	47Ω 5% 0402
3399	3198 031 05620	5.6kΩ 5% 0.01W 0402
3400	2122 550 00158	VDR 1mA 612V
3401	4822 117 10118	1MΩ 5% 0.5W
3404	4822 116 83872	220Ω 5% 0.5W
3450	2322 662 93131	PTC 10Ω
3451	2322 662 93131	PTC 10Ω
3452	2122 612 00068	NTC 1Ω 20% 6W
3460	4822 117 13602	2.2kΩ 5% 0.01W 0402
3461	4822 117 13606	10kΩ 5% 0.01W 0402
3463	4822 117 13606	10kΩ 5% 0.01W 0402
3465	4822 117 13606	10kΩ 5% 0.01W 0402
3467	4822 117 13606	10kΩ 5% 0.01W 0402
3469	3198 031 04720	4.7kΩ 5% 0402
3470	4822 117 13606	10kΩ 5% 0.01W 0402
3471	4822 117 13548	1kΩ 5% 0402
3472	4822 117 13548	1kΩ 5% 0402
3501	4822 051 30102	1kΩ 5% 0.062W
3502	4822 051 30471	47Ω 5% 0.062W
3503	2322 706 74702	4.7kΩ 5% 0402
3504	2322 706 73303	33kΩ 5% 0402
3505	2322 706 74702	4.7kΩ 5% 0402
3506	2322 662 93131	PTC 10Ω
3507	4822 051 20684	680kΩ 5% 0.1W
3509	2312 915 11209	12Ω 1% 0.5W
3603	4822 051 20474	470kΩ 5% 0.1W
3604	4822 051 20474	470kΩ 5% 0.1W
3605	4822 051 20474	470kΩ 5% 0.1W
3606	4822 051 30101	100Ω 5% 0.062W
3607	4822 117 12891	220kΩ 1%
3608	2312 915 11209	12Ω 1% 0.5W
3609	4822 051 20474	470kΩ 5% 0.1W
3610	4822 050 23308	3.3Ω 1% 0.6W
3611	4822 050 21003	10kΩ 1% 0.6W
3613	4822 117 13606	10kΩ 5% 0.01W 0402
3614	2322 194 95001	0.27Ω 5% 2W
3615	2322 194 95001	0.27Ω 5% 2W
3616	3198 031 01230	12kΩ 5% 0402
3617	3198 031 04730	47Ω 5% 0402
3618	4822 117 13603	33kΩ 5% 0402
3619	3198 031 03320	3.3kΩ 5% 0402
3620	2322 194 95001	0.27Ω 5% 2W
3621	4822 050 22208	2.2Ω 1% 0,6W
3622	4822 050 22208	2.2Ω 1% 0,6W
3623	4822 117 13548	1kΩ 5% 0402
3639	4822 051 10102	1kΩ 2% 0.25W
3640	4822 051 30331	330Ω 5% 0.062W
3641	4822 051 20471	470Ω 5% 0.1W
3642	4822 117 11503	220Ω 1% 0.1W
3643	4822 117 11503	220Ω 1% 0.1W
3651	4822 117 13601	22kΩ 5% 0402
3652	3198 031 01050	1MΩ 5% 0402
3654	4822 117 13606	10kΩ 5% 0.01W 0402
3655	4822 117 13548	1kΩ 5% 0402
3656	3198 031 01820	1.8kΩ 5% 0.01W 0402
3659	4822 117 11503	220Ω 1% 0.1W
3660	4822 117 11504	270Ω 1% 0.1W
3661	4822 117 11504	270Ω 1% 0.1W
3663	4822 052 10108	1Ω 5% 0.33W
3664	2322 706 71204	120kΩ 5% 0402
3665	2322 705 70274	270kΩ 5% 0402
3666	4822 051 30101	100Ω 5% 0.062W
3668	4822 052 11102	1kΩ 5% 0.5W
3669	2322 706 71204	120kΩ 5% 0402
3671	2322 706 71003	10kΩ 5% 0402
3673	4822 052 11102	1kΩ 5% 0.5W
3675	2322 702 60158	1.5Ω
3676	2322 706 74702	4.7kΩ 5% 0402
3677	2322 706 74703	47kΩ 1% 0402
3678	3198 031 04730	47Ω 5% 0402
3679	4822 117 12306	150kΩ 1% 0.1W
3680	4822 117 13579	220kΩ 1% 0.1W 0805
3681	4822 117 13579	220kΩ 1% 0.1W 0805
3682	4822 117 13579	220kΩ 1% 0.1W 0805
3683	4822 051 20334	330kΩ 5% 0.1W
3684	4822 051 20334	330kΩ 5% 0.1W
3685	4822 051 20334	330kΩ 5% 0.1W

3686	4822 117 12971	15Ω 5% 0603 0.62W
3690	3198 031 03920	3.9kΩ 5% 0402
3691	3198 031 08220	8.2kΩ 5% 0.5W
3692	4822 117 13606	10kΩ 5% 0.01W 0402
3693	4822 117 13602	2.2kΩ 5% 0.01W 0402
3806	4822 117 13543	470Ω 5% 0402
3807	4822 117 13606	10kΩ 5% 0.01W 0402
3808	4822 117 13606	10kΩ 5% 0.01W 0402
3809	3198 031 02730	27kΩ 5% 0402
3811	4822 117 13545	100Ω 1% 0402
3999	4822 117 13548	1kΩ 5% 0402
9001	4822 051 20008	Jumper 0805
9020	4822 051 20008	Jumper 0805
9028	4822 117 13605	Jumper 0402

5001	2422 531 02444	Transf. S13932-04Y
5002▲	3104 308 21022	Transf. BS42315-02
5004▲	3104 308 21022	Transf. BS42315-02
5005	3122 138 38901	Mains filter CU28D3
5121	3104 308 20771	Bridge coil BD21232-00
5220	3104 308 20911	Transf. BS29238-00
5225	2422 536 00672	4.7µH 20%
5229	2422 536 00826	220µH 10%
5290	3104 308 21171	Transf. BD15403-00
5291	4822 157 11737	22µH 10%
5292	4822 157 11737	22µH 10%
5293	4822 157 11737	22µH 10%
5401	3122 138 38901	Mains filter CU28D3
5402	3122 138 38901	Mains filter CU28D3
5500	2422 531 00102	Transf. BS16510-01 Y
5503	2422 535 94639	10µH 20%
5600	3104 308 20821	Coil BS42228-00 B
5601	4822 157 11411	Bead 80Ω at 100MHz
5612	4822 157 11411	Bead 80Ω at 100MHz
5660	4822 157 51192	220µH 10%

6002	4822 130 11397	BAS316
6003	9340 548 71115	PDZ33B
6004	4822 130 11397	BAS316
6005	4822 130 11397	BAS316
6006	4822 130 11397	BAS316
6007	4822 130 11397	BAS316
6008	4822 130 11397	BAS316
6009	4822 130 11397	BAS316
6010	4822 130 11397	BAS316
6011	4822 130 11397	BAS316
6012	3198 020 55680	BZX384-C5V6
6018	4822 130 11397	BAS316
6019	4822 130 11397	BAS316
6021	4822 130 32961	BYV28-200
6023	4822 130 11397	BAS316
6027	4822 130 11397	BAS316
6028	4822 130 11397	BAS316
6029	4822 130 11416	PDZ6.8B
6031	3198 020 55680	BZX384-C5V6
6032	3198 020 55680	BZX384-C5V6
6033	9322 150 18685	BZX384-C47
6034	4822 130 11397	BAS316
6035	4822 130 11397	BAS316
6042	9322 150 18685	BZX384-C47
6044	9322 202 88687	STTH2003CFP
6045	4822 130 32961	BYV28-200
6050	4822 130 11152	UDZ18B
6054	9340 553 52115	BAS321
6055	9340 553 52115	BAS321
6061	4822 130 11152	UDZ18B
6062	4822 130 11152	UDZ18B
6075	9340 292 80135	BZG03-C270
6077	9340 292 80135	BZG03-C270
6086	4822 130 11397	BAS316
6111	9340 553 52115	BAS321
6112	9340 553 52115	BAS321
6113	4822 130 11397	BAS316
6114	4822 130 11416	PDZ6.8B
6117	4822 130 11152	UDZ18B
6120	9322 202 75687	BYW29FP-200
6123	4822 130 11397	BAS316
6133	4822 130 11397	BAS316
6142	9322 192 15668	SM S3J
6201	3198 020 55680	BZX384-C5V6
6202	4822 130 11397	BAS316
6204	3198 020 55680	BZX384-C5V6
6205	4822 130 11152	UDZ18B
6206	4822 130 11397	BAS316
6211	9322 202 55685	BYG22D
6213	4822 130 11397	BAS316
6216	4822 130 11152	UDZ18B
6225	9322 173 47687	STPS20L40CFP
6230	9322 155 79685	EC31QS04
6267	4822 130 82627	SB540
6269	9322 099 61685	BYG10J
6270	9322 099 61685	BYG10J
6291	4822 130 11572	STPS8H100F
6292	4822 130 11572	STPS8H100F
6312	4822 130 80622	BAT54
6313	4822 130 80622	BAT54
6321	4822 130 80622	BAT54
6322	4822 130 80622	BAT54
6325	4822 130 11416	PDZ6.8B
6333	4822 130 80622	BAT54
6334	4822 130 80622	BAT54
6335	4822 130 11397	BAS316
6340	4822 130 80622	BAT54
6341	4822 130 80622	BAT54
6344	4822 130 10838	UDZ3.3B
6347	4822 130 80622	BAT54
6362	4822 130 11397	BAS316
6364	4822 130 11397	BAS316
6365	4822 130 11397	BAS316
6366	4822 130 11397	BAS316
6367	4822 130 11397	BAS316
6375	4822 130 11397	BAS316
6376	4822 130 11397	BAS316
6378	4822 130 80622	BAT54
6460	4822 130 11397	BAS316
6461	4822 130 11397	BAS316
6470	4822 130 11397	BAS316
6471	4822 130 11397	BAS316
6501	9322 218 64673	BZT03C200
6502	9322 218 64673	BZT03C200
6503	9322 176 76668	RS1J
6504	9322 176 76668	RS1J
6505	9322 155 79685	EC31QS04
6506	9322 218 64673	BZT03C200
6507	9322 155 79685	EC31QS04
6508	9322 128 69685	S1D
6510	9322 099 61685	BYG10J
6511	9322 099 61685	BYG10J
6512	9322 099 61685	BYG10J
6513	9322 099 61685	BYG10J
6600	9322 177 84667	GBU8JL-7014
6601	9322 150 17685	BZX384-C39
6602	4822 130 11522	UDZ15B
6605	9322 192 15668	SM S3J
6606	9322 192 15668	SM S3J
6608	9322 128 70685	SMSS14
6609	9322 208 81685	BZG05C18
6611	3139 120 52021	BYV29X-500
6640	9322 128 70685	SMSS14
6641	4822 130 11397	BAS316
6642	9322 128 70685	SMSS14
6643	4822 130 11152	UDZ18B
6651	4822 130 80622	BAT54
6652	9322 128 70685	SMSS14
6653	4822 130 10837	UDZS8.2B
6654	4822 130 11397	BAS316
6660	9322 202 55685	BYG22D
6661	9322 202 55685	BYG22D
6663	9322 198 81685	SL04
6665	9322 198 81685	SL04
6666	4822 130 10837	UDZS8.2B

7001	9322 108 21682	MC34067P
7002	9322 149 04682	TCET1102
7003	9322 149 04682	TCET1102
7004	9322 192 17685	P0102BL
7005	9322 192 18687	STP15NK50ZFP
7006	9322 192 18687	STP15NK50ZFP
7007	4822 130 41246	BC327-25
7008	4822 130 41246	BC327-25
7009	3198 010 42310	BC847BW
7010	9322 192 16685	TS2431AI
7011	9322 192 16685	TS2431AI
7012	3198 010 42310	BC847BW
7013	5322 130 63033	BCP56
7017	3198 010 42320	BC857BW
7018	3198 010 42310	BC847BW
7020	9335 671 30126	BC517
7021	9335 671 30126	BC517
7042	9340 308 50135	PMST5401
7050	9340 557 16127	PSMN035-150P
7052	9340 557 58118	PSMN063-150D
7058	3198 010 42310	BC847BW
7059	9340 308 60135	PMST5550
7090	3198 010 42320	BC857BW
7091	3198 010 42320	BC857BW
7092	3198 010 44350	BC807-25W
7093	4822 209 80591	LM317T
7110	9340 308 50135	PMST5401
7112	9352 673 56112	TEA1507p/N1
7117	9340 557 17118	PSMN035-150B
7120	9322 149 04682	TCET1102
7121	9322 192 16685	TS2431AI
7130	9322 192 16685	TS2431AI
7134	3198 010 42310	BC847BW
7200	9340 565 06215	BSH114
7202	9965 000 04199	BSN20
7212	9352 673 56112	TEA1507p/N1
7217	9340 557 18127	PSMN070-200P
7220	9322 149 04682	TCET1102
7227	9322 192 16685	TS2431AI
7230	9322 205 64687	L4940P85
7260	9322 166 31682	L4973V3.3
7304	9322 192 16685	TS2431AI
7308	9322 213 35668	LM339P
7326	3198 010 42310	BC847BW
7327	3198 010 42310	BC847BW
7330	9322 213 35668	LM339P
7341	3198 010 42320	BC857BW
7348	3198 010 42310	BC847BW
7351	3198 010 42310	BC847BW
7352	3198 010 42310	BC847BW
7362	3198 010 42310	BC847BW
7363	3198 010 42310	BC847BW
7368	9322 213 19668	LM324APW
7375	3198 010 42310	BC847BW
7376	3198 010 42310	BC847BW
7391	3198 010 42320	BC857BW
7460	9340 219 30115	BC817-25W
7461	4822 130 60142	BC869
7465	3198 010 42320	BC857BW
7470	9340 219 30115	BC817-25W
7500	9322 037 99682	TNY256P
7501	9322 149 04682	TCET1102
7502	9322 192 16685	TS2431AI
7540	4822 209 17398	LD1117DT33
7601	3198 010 42310	BC847BW
7602	3198 010 42320	BC857BW
7608	5322 130 44593	BC369
7610	9322 223 21687	STW29NK50Z
7640	9965 000 04199	BSN20
7641	9340 219 30115	BC817-25W
7650	9322 130 69682	MC33368P
7654	3198 010 42320	BC857BW
7655	3198 010 42310	BC847BW
7656	3198 010 42310	BC847BW
7661	5322 209 90529	MC34063AD

Small Signal Board [B]

Various

1082	2422 549 00148	Socket 3p m
1082▲	2422 549 00151	Socket 3p m
1101	2422 025 18749	Connector 3p m
1102	3139 147 19801	Tuner UV1318S/A IH-3
1104	2422 549 44372	SAW 38.9MHz K3953L
1106	2422 549 44369	SAW 38.9MHz K9656L
1107	2422 025 18749	Connector 3p m
1202	2422 543 01414	Xtal 24.576MHz
1801	2422 543 01133	Xtal 14.32MHz 20pF
1F00	2422 033 00515	Socket DVI-I 29p f
1F01	2422 026 05703	Socket 1P f
1G01	2422 025 18959	Socket 21P f shd
1G02	2422 025 18959	Socket 21P f shd
1J00	2422 025 10771	Connector 10p m
1J01	2422 025 10655	Connector 11p m
1J04	2422 025 10769	Connector 9p m
1J07▲	2422 086 11081	Fuse T3A 125V
1J08▲	2422 086 11105	Fuse F630mA 50V
1K00	2422 025 08149	Connector 6p m
1K02	2422 025 10768	Connector 3p m
1K04	2422 025 10655	Connector 11p m
1N01	2422 025 17274	Connector 10p m
1N02	2422 025 18779	Connector 4P m
1N05	2722 171 08825	Xtal 14.31818Mhz 15p F
1P01	2422 549 45325	Bead 67Ω at 100MHz
1P02	2422 549 45325	Bead 67Ω at 100MHz
1P03	2422 549 45325	Bead 67Ω at 100MHz
1P04	2422 549 45325	Bead 67Ω at 100MHz
1P05	2422 549 45325	Bead 67Ω at 100MHz
1P07	2422 025 18427	Connector 31p f
8321	3104 311 08731	Cable POSI/100/POSI

2101	4822 124 12095	100µF 20% 16V
2102	5322 126 11583	10nF 10% 50V 0603
2103	5322 126 11583	10nF 10% 50V 0603
2104	4822 122 33761	22pF 5% 50V

2105	4822 122 33761	22pF 5% 50V
2106	5322 126 11583	10nF 10% 50V 0603
2107	3198 024 44730	47nF 50V 0603
2109	5322 124 41945	22µF 20% 35V
2113	4822 124 12095	100µF 20% 16V
2203	4822 124 23002	10µF 16V
2206	2020 552 00035	2.2µF 6.3V 10% 0603
2207	2020 552 96718	220nF 10% 6.3V 0402
2208	4822 124 12084	1µF 20% 50V
2209	4822 124 23002	10µF 16V
2210	2020 552 96718	220nF 10% 6.3V 0402
2211	2020 552 96628	10nF 10% 16V 0402
2214	2020 552 96618	1nF 10% 50V 0402
2216	2020 552 96618	1nF 10% 50V 0402
2218	3198 035 71040	100nF 10% 16V 0402
2221	4822 124 12095	100µF 20% 16V
2223	2238 869 15101	100pF 5% 50V 0402
2225	2020 552 96618	1nF 10% 50V 0402
2226	3198 035 03320	3.3nF 5% 50V 0402
2227	2020 552 96618	1nF 10% 50V 0402
2228	3198 035 71040	100nF 10% 16V 0402
2230	3198 035 71040	100nF 10% 16V 0402
2231	2020 552 96718	220nF 10% 6.3V 0402
2232	3198 035 71040	100nF 10% 16V 0402
2233	4822 124 23002	10µF 16V
2234	2020 552 96718	220nF 10% 6.3V 0402
2235	2020 552 96718	220nF 10% 6.3V 0402
2236	4822 126 14076	220nF +80/-20% 25V
2237	2020 552 96718	220nF 10% 6.3V 0402
2238	2020 552 96718	220nF 10% 6.3V 0402
2239	3198 035 71040	100nF 10% 16V 0402
2240	2020 552 96718	220nF 10% 6.3V 0402
2241	2020 552 96718	220nF 10% 6.3V 0402
2242	3198 035 71040	100nF 10% 16V 0402
2243	4822 124 23002	10µF 16V
2244	3198 035 71040	100nF 10% 16V 0402
2245	3198 035 71040	100nF 10% 16V 0402
2246	3198 035 71040	100nF 10% 16V 0402
2250	2020 552 96618	1nF 10% 50V 0402
2251	2020 552 96656	10µF 20% 25V 1210
2252	3198 035 71040	100nF 10% 16V 0402
2253	3198 035 71040	100nF 10% 16V 0402
2254	3198 035 71040	100nF 10% 16V 0402
2255	3198 035 71040	100nF 10% 16V 0402
2256	4822 124 23002	10µF 16V
2257	3198 035 71040	100nF 10% 16V 0402
2258	2020 552 96637	10µF 10% 6.3V 0805
2259	3198 035 71040	100nF 10% 16V 0402
2260	2020 552 96637	10µF 10% 6.3V 0805
2262	4822 124 12082	10µF 20% 50V
2263	3198 035 26820	6.8nF 10% 16V 0402
2264	3198 017 44740	470nF 10V 0603
2265	3198 017 41050	1µF 10V 0603
2266	3198 035 71040	100nF 10% 16V 0402
2267	2020 552 96718	220nF 10% 6.3V 0402
2269	2020 012 00003	470µF 16V 20% SMD
2270	3198 035 71040	100nF 10% 16V 0402
2271	4822 124 12095	100µF 20% 16V
2272	3198 035 71040	100nF 10% 16V 0402
2273	2020 552 96718	220nF 10% 6.3V 0402
2274	3198 017 31540	150nF 10V 0603
2277	3198 035 71040	100nF 10% 16V 0402
2280	2020 552 00027	4.7µF 2% 6.3V 0603
2281	2020 552 00027	4.7µF 2% 6.3V 0603
2285▲	3198 035 71040	100nF 10% 16V 0402
2286	3198 035 71040	100nF 10% 16V 0402
2289▲	4822 051 30151	150Ω 5% 0.062W
2290▲	2222 240 59872	4.7µF 5% 10V 0805
2291▲	3198 035 71040	100nF 10% 16V 0402
2449	3198 035 71040	100nF 10% 16V 0402
2501	3198 035 71040	100nF 10% 16V 0402
2502	3198 035 71040	100nF 10% 16V 0402
2503	3198 035 71040	100nF 10% 16V 0402
2504	3198 035 71040	100nF 10% 16V 0402
2505	3198 035 71040	100nF 10% 16V 0402
2506	3198 035 03310	330pF 5% 50V 0402
2507	3198 035 04710	470pF 50V 0402
2508	2238 869 15829	82pF 5% 50V 0402
2509	2238 869 15829	82pF 5% 50V 0402
2603	2020 552 96834	1µF 20% 6.3V 0402
2604	3198 035 04710	470pF 50V 0402
2605	2020 552 96834	1µF 20% 6.3V 0402
2608	2020 552 96834	1µF 20% 6.3V 0402
2609	3198 035 04710	470pF 50V 0402
2610	2020 552 96834	1µF 20% 6.3V 0402
2611	4822 124 12095	100µF 20% 16V
2612	3198 017 41050	1µF 10V 0603
2614	3198 035 71040	100nF 10% 16V 0402
2615	2020 012 00003	470µF 16V 20% SMD
2618	2020 012 00003	470µF 16V 20% SMD
2704	4822 124 23002	10µF 16V
2706	4822 124 23002	10µF 16V
2709	4822 124 80151	47µF 16V
2710	2020 552 96656	10µF 20% 25V 1210
2711	2020 552 96656	10µF 20% 25V 1210
2713	2020 012 00028	470µF 20% 16V
2714	3198 035 02210	220pF 5% 50V 0402
2715	2020 552 96455	22nF 10% 16V 0402
2716	2020 012 00028	470µF 20% 16V
2730	2020 552 96656	10µF 20% 25V 1210
2731	2020 012 00003	470µF 16V 20% SMD
2733	3198 035 02210	220pF 5% 50V 0402
2734	2238 787 16641	22nF 10% 16V 0402
2735	3198 035 04710	470pF 50V 0402
2736	2022 031 00308	22µF 20% 35V
2737	2020 012 00003	470µF 16V 20% SMD
2738	4822 124 80151	47µF 16V
2739	4822 124 80151	47µF 16V
2741	4822 126 13879	220nF +80-20% 16V
2750	2020 552 00035	2.2µF 6.3V 10% 0603
2753	2020 012 00003	470µF 16V 20% SMD
2755	3198 035 14720	4.7nF 5% 25V 0402
2756	3198 035 04710	470pF 50V 0402
2757	2020 012 00003	470µF 16V 20% SMD
2758	2020 012 00003	470µF 16V 20% SMD
2761	2020 552 96671	1µF 10% 25V
2762	4822 124 23237	22µF 6.3V
2800	2020 021 91557	100µF 20% 16V
2801	3198 035 71040	100nF 10% 16V 0402
2802	3198 035 71040	100nF 10% 16V 0402
2803	3198 035 71040	100nF 10% 16V 0402
2804	3198 035 71040	100nF 10% 16V 0402
2805	3198 035 71040	100nF 10% 16V 0402
2806	3198 035 71040	100nF 10% 16V 0402
2807	3198 035 71040	100nF 10% 16V 0402
2808	3198 035 71040	100nF 10% 16V 0402
2809	3198 035 71040	100nF 10% 16V 0402
2810	3198 035 71040	100nF 10% 16V 0402
2811	3198 035 71040	100nF 10% 16V 0402
2812	3198 035 71040	100nF 10% 16V 0402
2813	3198 035 71040	100nF 10% 16V 0402
2814	3198 035 71040	100nF 10% 16V 0402
2815	5322 124 41945	22µF 20% 35V
2816	3198 035 71040	100nF 10% 16V 0402
2817	3198 035 71040	100nF 10% 16V 0402
2818	3198 035 71040	100nF 10% 16V 0402
2819	3198 035 71040	100nF 10% 16V 0402
2820	3198 035 71040	100nF 10% 16V 0402
2821	3198 035 71040	100nF 10% 16V 0402
2822	3198 035 71040	100nF 10% 16V 0402
2823	4822 126 14519	22pF 5% 50V 0402
2824	4822 126 14519	22pF 5% 50V 0402
2900	3198 035 71040	100nF 10% 16V 0402
2901	2020 552 96618	1nF 10% 50V 0402
2902	2020 021 00046	470µF 20% 16V
2903	3198 035 71040	100nF 10% 16V 0402
2904	4822 124 80151	47µF 16V
2905	2020 021 91557	100µF 20% 16V
2906	3198 035 71040	100nF 10% 16V 0402
2907	3198 035 71040	100nF 10% 16V 0402
2908	3198 035 71040	100nF 10% 16V 0402
2909	3198 035 71040	100nF 10% 16V 0402
2910	3198 035 71040	100nF 10% 16V 0402
2911	3198 035 71040	100nF 10% 16V 0402
2912	3198 035 71040	100nF 10% 16V 0402
2913	3198 035 71040	100nF 10% 16V 0402
2914	3198 035 71040	100nF 10% 16V 0402
2915	3198 035 71040	100nF 10% 16V 0402
2916	3198 035 71040	100nF 10% 16V 0402
2917	2020 021 91557	100µF 20% 16V
2918	3198 035 71040	100nF 10% 16V 0402
2919	3198 035 71040	100nF 10% 16V 0402
2920	3198 035 71040	100nF 10% 16V 0402
2921	3198 035 71040	100nF 10% 16V 0402
2922	3198 035 71040	100nF 10% 16V 0402
2923	3198 035 71040	100nF 10% 16V 0402
2924	3198 035 71040	100nF 10% 16V 0402
2925	3198 035 71040	100nF 10% 16V 0402
2926	3198 035 71040	100nF 10% 16V 0402
2927	3198 035 71040	100nF 10% 16V 0402
2928	3198 035 71040	100nF 10% 16V 0402
2929	3198 035 71040	100nF 10% 16V 0402
2930	3198 035 71040	100nF 10% 16V 0402
2931	3198 035 71040	100nF 10% 16V 0402
2932	3198 035 71040	100nF 10% 16V 0402
2933	3198 035 71040	100nF 10% 16V 0402
2934	4822 124 80151	47µF 16V
2935	3198 035 71040	100nF 10% 16V 0402
2936	3198 035 71040	100nF 10% 16V 0402
2937	3198 035 71040	100nF 10% 16V 0402
2938	3198 035 71040	100nF 10% 16V 0402
2939	3198 035 71040	100nF 10% 16V 0402
2940	4822 124 80151	47µF 16V
2941	3198 035 71040	100nF 10% 16V 0402
2942	3198 035 71040	100nF 10% 16V 0402
2945	5322 124 41945	22µF 20% 35V
2946	3198 035 71040	100nF 10% 16V 0402
2947	3198 035 71040	100nF 10% 16V 0402
2948	3198 035 71040	100nF 10% 16V 0402
2949	3198 035 71040	100nF 10% 16V 0402
2950	5322 124 41945	22µF 20% 35V
2951	3198 035 71040	100nF 10% 16V 0402
2952	3198 035 71040	100nF 10% 16V 0402
2953	3198 035 71040	100nF 10% 16V 0402
2954	3198 035 71040	100nF 10% 16V 0402
2955	5322 124 41945	22µF 20% 35V
2956	3198 035 71040	100nF 10% 16V 0402
2957	3198 035 71040	100nF 10% 16V 0402
2958	3198 035 71040	100nF 10% 16V 0402
2959	3198 035 71040	100nF 10% 16V 0402
2A00	2238 586 59812	100nF 20% 50V 0603
2A01	2238 869 15101	100pF 5% 50V 0402
2A02	2238 869 15101	100pF 5% 50V 0402
2A12	2020 552 96628	10nF 10% 16V 0402
2A13	3198 035 71040	100nF 10% 16V 0402
2B01	4822 124 80151	47µF 16V
2B02	4822 124 11131	47µF 6.3V
2B03	3198 035 71040	100nF 10% 16V 0402
2B04	3198 035 71040	100nF 10% 16V 0402
2B05	3198 035 71040	100nF 10% 16V 0402
2B06	3198 035 71040	100nF 10% 16V 0402
2B07	3198 035 71040	100nF 10% 16V 0402
2B08	3198 035 71040	100nF 10% 16V 0402
2B09	3198 035 71040	100nF 10% 16V 0402
2B10	3198 035 71040	100nF 10% 16V 0402
2B11	3198 035 71040	100nF 10% 16V 0402
2B12	3198 035 71040	100nF 10% 16V 0402
2B13	3198 035 71040	100nF 10% 16V 0402
2B14	3198 035 71040	100nF 10% 16V 0402
2B15	3198 035 71040	100nF 10% 16V 0402
2B16	3198 035 71040	100nF 10% 16V 0402
2B17	3198 035 71040	100nF 10% 16V 0402
2B18	5322 124 41945	22µF 20% 35V
2C00	3198 035 71040	100nF 10% 16V 0402
2C01	4822 124 23002	10µF 16V
2C02	3198 035 71040	100nF 10% 16V 0402
2C03	3198 035 71040	100nF 10% 16V 0402
2E00	2020 552 00005	4.7µF 10% 6.3V 0603
2E01	2020 552 00005	4.7µF 10% 6.3V 0603
2E02	2020 552 00005	4.7µF 10% 6.3V 0603
2E03	3198 035 71040	100nF 10% 16V 0402
2E04	2020 552 96834	1µF 20% 6.3V 0402
2E05	2020 552 96834	1µF 20% 6.3V 0402
2E06	2020 552 96834	1µF 20% 6.3V 0402
2E07	4822 126 14324	33pF 5% 50V 0402
2E08	2020 552 00005	4.7µF 10% 6.3V 0603
2E09	4822 126 14324	33pF 5% 50V 0402
2E10	2020 552 00005	4.7µF 10% 6.3V 0603
2E11	4822 126 14324	33pF 5% 50V 0402
2E12	2020 552 00005	4.7µF 10% 6.3V 0603
2E13	3198 017 41050	1µF 10V 0603
2E14	4822 126 14324	33pF 5% 50V 0402
2E15	3198 035 71040	100nF 10% 16V 0402
2E16	3198 035 71040	100nF 10% 16V 0402
2E17	3198 035 71040	100nF 10% 16V 0402
2E18	3198 035 71040	100nF 10% 16V 0402
2E19	3198 035 71040	100nF 10% 16V 0402
2E20	4822 124 11131	47µF 6.3V
2E21	2020 552 00005	4.7µF 10% 6.3V 0603
2E22	2020 552 00005	4.7µF 10% 6.3V 0603
2E23	2020 552 00005	4.7µF 10% 6.3V 0603
2E24	3198 035 71040	100nF 10% 16V 0402
2E25	3198 035 71040	100nF 10% 16V 0402
2E26	3198 035 71040	100nF 10% 16V 0402
2E27	3198 035 71040	100nF 10% 16V 0402
2E28	3198 035 71040	100nF 10% 16V 0402
2E29	3198 035 71040	100nF 10% 16V 0402
2E30	3198 035 71040	100nF 10% 16V 0402
2E31	3198 035 71040	100nF 10% 16V 0402
2E32	3198 035 71040	100nF 10% 16V 0402
2E33	2020 552 00005	4.7µF 10% 6.3V 0603
2E34	2020 552 00005	4.7µF 10% 6.3V 0603
2E35	2020 552 00005	4.7µF 10% 6.3V 0603
2E36	3198 035 71040	100nF 10% 16V 0402
2F04	2020 552 94427	100pF 5% 50V
2F07	2238 586 59812	100nF 20% 50V 0603
2F08	4822 126 14241	330pF 0603 50V
2F09	4822 126 14241	330pF 0603 50V
2F10	2020 552 94427	100pF 5% 50V
2F11	4822 126 14241	330pF 0603 50V
2F12	4822 126 14241	330pF 0603 50V
2F13	4822 126 14508	180pF 5% 50V 0603
2F14	4822 126 14508	180pF 5% 50V 0603
2F15	2020 552 00035	2.2µF 6.3V 10% 0603
2F16	2020 552 00035	2.2µF 6.3V 10% 0603
2G05	4822 126 14241	330pF 0603 50V
2G06	4822 126 14508	180pF 5% 50V 0603
2G07	4822 124 23002	10µF 16V
2G08	2020 552 00035	2.2µF 6.3V 10% 0603
2G09	4822 126 14241	330pF 0603 50V
2G10	4822 126 14508	180pF 5% 50V 0603
2G11	4822 124 23002	10µF 16V

2G12	2020 552 00035	2.2µF 6.3V 10% 0603
2G18	4822 126 14241	330pF 0603 50V
2G19	4822 126 14508	180pF 5% 50V 0603
2G20	4822 124 23002	10µF 16V
2G21	2020 552 00035	2.2µF 6.3V 10% 0603
2G22	4822 126 14241	330pF 0603 50V
2G23	4822 126 14508	180pF 5% 50V 0603
2G24	4822 124 23002	10µF 16V
2G25	2020 552 00035	2.2µF 6.3V 10% 0603
2G26	2020 552 00005	4.7µF 10% 6.3V 0603
2G28	2020 552 00005	4.7µF 10% 6.3V 0603
2G47	2238 586 59812	100nF 20% 50V 0603
2G55	2020 552 00005	4.7µF 10% 6.3V 0603
2G56	2020 552 00005	4.7µF 10% 6.3V 0603
2J02	2020 552 96618	1nF 10% 50V 0402
2J03	2020 552 96618	1nF 10% 50V 0402
2J17	2020 552 96618	1nF 10% 50V 0402
2J18	2238 869 15101	100pF 5% 50V 0402
2J19	2238 869 15101	100pF 5% 50V 0402
2J21	2238 869 15101	100pF 5% 50V 0402
2J22	2238 869 15101	100pF 5% 50V 0402
2J23	2238 869 15101	100pF 5% 50V 0402
2J26	2238 869 15101	100pF 5% 50V 0402
2J27	2238 869 15101	100pF 5% 50V 0402
2J28	2238 869 15101	100pF 5% 50V 0402
2J29	2238 869 15101	100pF 5% 50V 0402
2J30	2020 552 96618	1nF 10% 50V 0402
2J31	2238 869 15101	100pF 5% 50V 0402
2J35	2020 552 96618	1nF 10% 50V 0402
2K00	2020 552 96618	1nF 10% 50V 0402
2K01	2020 552 96618	1nF 10% 50V 0402
2K02	2238 869 15109	10pF 5% 50V 0402
2K03	2238 869 15109	10pF 5% 50V 0402
2K04	2238 869 15109	10pF 5% 50V 0402
2K05	2238 869 15109	10pF 5% 50V 0402
2K06	2238 869 15101	100pF 5% 50V 0402
2K07	2238 869 15101	100pF 5% 50V 0402
2K08	2020 552 00035	2.2µF 6.3V 10% 0603
2K10	2238 869 15101	100pF 5% 50V 0402
2K11	2238 869 15101	100pF 5% 50V 0402
2K12	2020 552 00035	2.2µF 6.3V 10% 0603
2K13	2238 869 15101	100pF 5% 50V 0402
2K14	2238 869 15101	100pF 5% 50V 0402
2K16	2238 869 15101	100pF 5% 50V 0402
2K17	2238 869 15101	100pF 5% 50V 0402
2K18	2238 869 15101	100pF 5% 50V 0402
2K19	2020 552 96618	1nF 10% 50V 0402
2K20	2020 552 96618	1nF 10% 50V 0402
2K21	2238 869 15101	100pF 5% 50V 0402
2K22	2238 869 15101	100pF 5% 50V 0402
2K23	2238 869 15101	100pF 5% 50V 0402
2K24	2238 869 15101	100pF 5% 50V 0402
2K25	2238 869 15101	100pF 5% 50V 0402
2K26	2238 869 15101	100pF 5% 50V 0402
2K27	2238 869 15101	100pF 5% 50V 0402
2K28	2238 869 15101	100pF 5% 50V 0402
2L02	2020 552 96637	10µF 10% 6.3V 0805
2L03	3198 035 71040	100nF 10% 16V 0402
2L04	3198 035 71040	100nF 10% 16V 0402
2L05	3198 035 71040	100nF 10% 16V 0402
2L06	3198 035 71040	100nF 10% 16V 0402
2L07	2020 552 96637	10µF 10% 6.3V 0805
2L08	3198 035 71040	100nF 10% 16V 0402
2L09	3198 035 71040	100nF 10% 16V 0402
2L10	3198 035 71040	100nF 10% 16V 0402
2L11	3198 035 71040	100nF 10% 16V 0402
2L13	3198 035 74730	47nF 5% 16V 0402
2L17	3198 035 74730	47nF 5% 16V 0402
2L20	3198 035 71040	100nF 10% 16V 0402
2L21	3198 035 71040	100nF 10% 16V 0402
2L22	2020 552 96637	10µF 10% 6.3V 0805
2L23	3198 035 71040	100nF 10% 16V 0402
2L24	3198 035 71040	100nF 10% 16V 0402
2L26	2020 552 96718	220nF 10% 6.3V 0402
2L27	4822 124 23002	10µF 16V
2L28	4822 124 23002	10µF 16V
2L29	4822 124 23002	10µF 16V
2L30	4822 124 23002	10µF 16V
2L31	4822 124 12095	100µF 20% 16V
2L32	4822 124 12095	100µF 20% 16V
2L33	3198 035 71040	100nF 10% 16V 0402
2L34	3198 035 71040	100nF 10% 16V 0402
2L37	4822 126 14524	68pF 5% 50V 0402
2L39	2238 869 15829	82pF 5% 50V 0402
2M00	3198 035 71040	100nF 10% 16V 0402
2M01	3198 035 71040	100nF 10% 16V 0402
2M02	3198 035 71040	100nF 10% 16V 0402
2M03	3198 035 71040	100nF 10% 16V 0402
2M04	3198 035 71040	100nF 10% 16V 0402
2M05	3198 035 71040	100nF 10% 16V 0402
2M06	3198 035 71040	100nF 10% 16V 0402
2M07	3198 035 71040	100nF 10% 16V 0402
2M08	3198 035 71040	100nF 10% 16V 0402
2M09	3198 035 71040	100nF 10% 16V 0402
2M10	3198 035 71040	100nF 10% 16V 0402
2M11	3198 035 71040	100nF 10% 16V 0402
2M12	3198 035 71040	100nF 10% 16V 0402
2M13	3198 035 71040	100nF 10% 16V 0402
2M14	3198 035 71040	100nF 10% 16V 0402
2M15	3198 035 71040	100nF 10% 16V 0402
2M16	3198 035 71040	100nF 10% 16V 0402
2M17	3198 035 71040	100nF 10% 16V 0402
2M18	3198 035 71040	100nF 10% 16V 0402
2M19	3198 035 71040	100nF 10% 16V 0402
2M20	3198 035 71040	100nF 10% 16V 0402
2M21	2020 552 00035	2.2µF 6.3V 10% 0603
2M22	3198 035 71040	100nF 10% 16V 0402
2M23	4822 124 12095	100µF 20% 16V
2M24	3198 035 71040	100nF 10% 16V 0402
2M25	3198 035 71040	100nF 10% 16V 0402
2M26	3198 035 71040	100nF 10% 16V 0402
2M27	3198 035 71040	100nF 10% 16V 0402
2M28	3198 035 71040	100nF 10% 16V 0402
2M29	3198 035 71040	100nF 10% 16V 0402
2M30	3198 035 71040	100nF 10% 16V 0402
2M31	4822 124 12095	100µF 20% 16V
2M32	4822 124 12095	100µF 20% 16V
2M56	4822 124 12095	100µF 20% 16V
2M65	3198 035 71040	100nF 10% 16V 0402
2M66	4822 124 12095	100µF 20% 16V
2M67	3198 035 71040	100nF 10% 16V 0402
2M68	4822 124 12095	100µF 20% 16V
2N01	3198 035 71040	100nF 10% 16V 0402
2N02	3198 035 71040	100nF 10% 16V 0402
2N03	2020 552 96834	1µF 20% 6.3V 0402
2N04	2020 552 96618	1nF 10% 50V 0402
2N05	3198 035 71040	100nF 10% 16V 0402
2N06	3198 035 71040	100nF 10% 16V 0402
2N07	3198 035 71040	100nF 10% 16V 0402
2N08	3198 035 71040	100nF 10% 16V 0402
2N09	3198 035 71040	100nF 10% 16V 0402
2N10	3198 035 71040	100nF 10% 16V 0402
2N11	2238 869 15101	100pF 5% 50V 0402
2N12	2238 869 15101	100pF 5% 50V 0402
2N13	2238 869 15101	100pF 5% 50V 0402
2N14	2238 869 15101	100pF 5% 50V 0402
2N15	2238 869 15101	100pF 5% 50V 0402
2N16	2238 869 15101	100pF 5% 50V 0402
2P01	2020 552 00035	2.2µF 6.3V 10% 0603
2P02	3198 035 71040	100nF 10% 16V 0402
2P03	3198 035 71040	100nF 10% 16V 0402
2P04	3198 035 71040	100nF 10% 16V 0402
2P05	3198 035 71040	100nF 10% 16V 0402
2P06	3198 035 71040	100nF 10% 16V 0402
2P07	3198 035 71040	100nF 10% 16V 0402
2P08	3198 035 71040	100nF 10% 16V 0402
2P09	3198 035 71040	100nF 10% 16V 0402
2P10	3198 035 71040	100nF 10% 16V 0402
2P11	3198 035 71040	100nF 10% 16V 0402
2P12	3198 035 71040	100nF 10% 16V 0402
2P13	3198 035 71040	100nF 10% 16V 0402
2P14	3198 035 71040	100nF 10% 16V 0402
2P15	4822 124 12095	100µF 20% 16V
2P16	3198 035 71040	100nF 10% 16V 0402
2P17	2020 552 00035	2.2µF 6.3V 10% 0603
2P18	2020 552 00035	2.2µF 6.3V 10% 0603
2P19	3198 035 71040	100nF 10% 16V 0402
2P20	3198 035 71040	100nF 10% 16V 0402
2P21	3198 035 71040	100nF 10% 16V 0402
2P22	2020 552 00035	2.2µF 6.3V 10% 0603
2P23	3198 035 71040	100nF 10% 16V 0402
2P24	3198 035 71040	100nF 10% 16V 0402
2P25	3198 035 71040	100nF 10% 16V 0402
2P26	3198 035 71040	100nF 10% 16V 0402
2P27	3198 035 71040	100nF 10% 16V 0402
2P28	3198 035 71040	100nF 10% 16V 0402
2P29	3198 035 71040	100nF 10% 16V 0402
2P30	3198 035 71040	100nF 10% 16V 0402
2P31	3198 035 71040	100nF 10% 16V 0402
2P32	3198 035 71040	100nF 10% 16V 0402
2P33	3198 035 71040	100nF 10% 16V 0402
2P34	3198 035 71040	100nF 10% 16V 0402
2P35	3198 035 71040	100nF 10% 16V 0402
2P36	2238 869 15109	10pF 5% 50V 0402
2P37	2238 869 15109	10pF 5% 50V 0402
2P38	2238 869 15109	10pF 5% 50V 0402
2P39	2238 869 15109	10pF 5% 50V 0402
2P40	2238 869 15109	10pF 5% 50V 0402
2P41	2238 869 15109	10pF 5% 50V 0402
2P42	2238 869 15109	10pF 5% 50V 0402
2P43	2238 869 15109	10pF 5% 50V 0402
2P44	2238 869 15109	10pF 5% 50V 0402
2P45	2238 869 15109	10pF 5% 50V 0402

-WW-

3103	4822 117 13606	10kΩ 5% 0.01W 0402
3104	4822 051 30103	10kΩ 5% 0.062W
3105	4822 117 13548	1kΩ 5% 0402
3107	4822 051 30682	6.8Ω 5% 0.062W
3108	4822 051 30222	2.2kΩ 5% 0.062W
3109	4822 051 30222	2.2kΩ 5% 0.062W
3111	4822 051 30223	22kΩ 5% 0.062W
3112	4822 051 30183	18kΩ 5% 0.062W
3120	4822 117 13606	10kΩ 5% 0.01W 0402
3121	4822 117 13606	10kΩ 5% 0.01W 0402
3122	4822 117 13545	100Ω 1% 0402
3123	4822 117 13545	100Ω 1% 0402
3124	4822 117 13545	100Ω 1% 0402
3125	4822 117 13545	100Ω 1% 0402
3207	3198 031 06810	680Ω 5% 0.01W 0402
3208	4822 117 13545	100Ω 1% 0402
3209	4822 117 13545	100Ω 1% 0402
3210	4822 117 13545	100Ω 1% 0402
3211	4822 117 13545	100Ω 1% 0402
3212	4822 117 13545	100Ω 1% 0402
3213	4822 117 13545	100Ω 1% 0402
3214	3198 031 06810	680Ω 5% 0.01W 0402
3215	3198 031 02710	270Ω 5% 0.1W 0402
3216	4822 117 13597	330Ω 5% 0402 0.01W
3217	4822 117 13548	1kΩ 5% 0402
3218	4822 117 11297	100kΩ 5% 0.1W
3219	4822 117 13545	100Ω 1% 0402
3220	3198 031 04730	47Ω 5% 0402
3222	4822 117 13545	100Ω 1% 0402
3223	3198 031 01090	10Ω 5% 0.01W 0402
3224	3198 031 04720	4.7kΩ 5% 0402
3225	3198 031 04720	4.7kΩ 5% 0402
3226	4822 117 13545	100Ω 1% 0402
3227	4822 117 13545	100Ω 1% 0402
3229	3198 031 04720	4.7kΩ 5% 0402
3230	4822 117 13606	10kΩ 5% 0.01W 0402
3231	4822 117 13602	2.2kΩ 5% 0.01W 0402
3232	3198 031 03320	3.3kΩ 5% 0402
3233	3198 031 03320	3.3kΩ 5% 0402
3234	3198 031 04720	4.7kΩ 5% 0402
3235	3198 031 04720	4.7kΩ 5% 0402
3236	3198 031 04720	4.7kΩ 5% 0402
3238	4822 117 13545	100Ω 1% 0402
3239	4822 117 13545	100Ω 1% 0402
3240	2322 704 61002	1kΩ 1%
3241	4822 117 13545	100Ω 1% 0402
3242	4822 117 13606	10kΩ 5% 0.01W 0402
3243	3198 031 04720	4.7kΩ 5% 0402
3245	3198 031 02240	220kΩ 5% 0.1W 0402
3246	3198 031 04720	4.7kΩ 5% 0402
3247	4822 117 13545	100Ω 1% 0402
3248	4822 117 13545	100Ω 1% 0402
3249	3198 031 04720	4.7kΩ 5% 0402
3250	4822 117 13545	100Ω 1% 0402
3251	4822 117 13545	100Ω 1% 0402
3252	4822 117 13545	100Ω 1% 0402
3253	4822 117 13545	100Ω 1% 0402
3255	4822 117 13605	Jumper 0402
3256	4822 117 13605	Jumper 0402
3257	4822 117 13605	Jumper 0402
3258	4822 117 13548	1kΩ 5% 0402
3259	4822 117 13548	1kΩ 5% 0402
3260	4822 117 13548	1kΩ 5% 0402
3262	4822 117 13601	22kΩ 5% 0402
3263	2322 702 70398	3.9Ω 5% 0603
3264	4822 117 13601	22kΩ 5% 0402
3265	2322 702 70398	3.9Ω 5% 0603
3266	3198 031 05620	5.6kΩ 5% 0.01W 0402
3267	3198 031 05620	5.6kΩ 5% 0.01W 0402
3268	4822 117 13545	100Ω 1% 0402
3272	3198 031 04720	4.7kΩ 5% 0402
3273	4822 117 13548	1kΩ 5% 0402
3274	3198 031 03910	390Ω 1% 0402
3275	4822 117 13545	100Ω 1% 0402
3276	3198 031 07590	75Ω 5% 0402
3277	3198 031 01520	1.2kΩ 5% 0.01W 0402
3280▲	4822 117 11151	1Ω 5%
3281	3198 031 03930	39kΩ 5% 0402
3285	4822 117 13605	Jumper 0402
3286	4822 117 13545	100Ω 1% 0402
3292▲	3198 031 01230	12kΩ 5% 0402
3294▲	3198 031 04730	47Ω 5% 0402
3295▲	4822 117 11297	100kΩ 5% 0.1W
3431	4822 117 13548	1kΩ 5% 0402
3451	3198 031 04720	4.7kΩ 5% 0402
3453	4822 117 13545	100Ω 1% 0402
3454	4822 117 13545	100Ω 1% 0402
3455	4822 117 13545	100Ω 1% 0402
3456	4822 117 13545	100Ω 1% 0402
3458	4822 117 13545	100Ω 1% 0402
3459	4822 117 13545	100Ω 1% 0402
3461	4822 117 13545	100Ω 1% 0402
3462	4822 117 13545	100Ω 1% 0402
3501	4822 117 13543	470Ω 5% 0402
3502	3198 031 04730	47Ω 5% 0402

3604	4822 117 13601	22kΩ 5% 0402
3605	4822 117 13601	22kΩ 5% 0402
3609	4822 117 13601	22kΩ 5% 0402
3610	4822 117 11297	100kΩ 5% 0.1W
3611	4822 117 11297	100kΩ 5% 0.1W
3612	4822 117 13601	22kΩ 5% 0402
3616	4822 117 13548	1kΩ 5% 0402
3617	4822 117 13548	1kΩ 5% 0402
3619	4822 117 13606	10kΩ 5% 0.01W 0402
3620	4822 117 13606	10kΩ 5% 0.01W 0402
3628	4822 117 13606	10kΩ 5% 0.01W 0402
3629	4822 117 13601	22kΩ 5% 0402
3630	4822 117 13602	2.2kΩ 5% 0.01W 0402
3631	4822 117 13602	2.2kΩ 5% 0.01W 0402
3632	2322 705 70569	56Ω 5% 0402
3633	2322 705 70569	56Ω 5% 0402
3708	4822 117 13606	10kΩ 5% 0.01W 0402
3709	3198 031 06820	6.8kΩ 5% 0.01W 0402
3712	5322 117 13031	5.6kΩ 1% 0.063W 0603
3713	2322 704 63302	3.3kΩ 1% 0603
3716	3198 031 04720	4.7kΩ 5% 0402
3732	2322 704 61002	1kΩ 1%
3733	2322 704 63302	3.3kΩ 1% 0603
3734	4822 117 13602	2.2kΩ 5% 0.01W 0402
3735	4822 117 13548	1kΩ 5% 0402
3736	3198 031 04720	4.7kΩ 5% 0402
3740	3198 031 01520	1.2kΩ 5% 0.01W 0402
3741	3198 031 01520	1.2kΩ 5% 0.01W 0402
3742	3198 031 01530	15kΩ 5% 0.01W 0402
3743	4822 117 13601	22kΩ 5% 0402
3750	4822 117 13601	22kΩ 5% 0402
3751	3198 021 31080	1Ω 5% 0603
3752	3198 021 31080	1Ω 5% 0603
3753	2322 704 61002	1kΩ 1%
3754	2322 704 63302	3.3kΩ 1% 0603
3759	3198 031 01230	12kΩ 5% 0402
3761	4822 117 13545	100Ω 1% 0402
3800	4822 117 13606	10kΩ 5% 0.01W 0402
3801	2350 035 10229	4 x 22Ω 5% 1206
3802	2350 035 10229	4 x 22Ω 5% 1206
3803	2350 035 10229	4 x 22Ω 5% 1206
3804	2350 035 10229	4 x 22Ω 5% 1206
3805	2350 035 10229	4 x 22Ω 5% 1206
3806	2350 035 10229	4 x 22Ω 5% 1206
3807	2350 035 10229	4 x 22Ω 5% 1206
3808	2350 035 10229	4 x 22Ω 5% 1206
3809	2350 035 10229	4 x 22Ω 5% 1206
3810	2350 035 10229	4 x 22Ω 5% 1206
3811	2350 035 10229	4 x 22Ω 5% 1206
3812	2350 035 10229	4 x 22Ω 5% 1206
3813	2350 035 10229	4 x 22Ω 5% 1206
3814	3198 031 02290	22Ω 5% 0.1W 0402
3815	3198 031 02290	22Ω 5% 0.1W 0402
3816	3198 031 02290	22Ω 5% 0.1W 0402
3817	4822 117 13606	10kΩ 5% 0.01W 0402
3818	4822 117 13606	10kΩ 5% 0.01W 0402
3820	4822 117 13606	10kΩ 5% 0.01W 0402
3822	4822 117 13545	100Ω 1% 0402
3824	3198 031 03320	3.3kΩ 5% 0402
3825	3198 031 11030	4 x 10kΩ 5% 1206
3826	3198 031 11030	4 x 10kΩ 5% 1206
3827	4822 117 13606	10kΩ 5% 0.01W 0402
3828	4822 117 13606	10kΩ 5% 0.01W 0402
3829	4822 117 13606	10kΩ 5% 0.01W 0402
3831	4822 117 13545	100Ω 1% 0402
3832	4822 117 13545	100Ω 1% 0402
3833	3198 031 01090	10Ω 5% 0.01W 0402
3834	4822 117 13606	10kΩ 5% 0.01W 0402
3835	4822 117 13606	10kΩ 5% 0.01W 0402
3836	4822 117 13606	10kΩ 5% 0.01W 0402
3837	4822 117 13606	10kΩ 5% 0.01W 0402
3838	4822 117 13606	10kΩ 5% 0.01W 0402
3839	4822 117 13545	100Ω 1% 0402
3840	3198 031 02290	22Ω 5% 0.1W 0402
3841	4822 117 13606	10kΩ 5% 0.01W 0402
3900	3198 031 03320	3.3kΩ 5% 0402
3901	4822 117 13606	10kΩ 5% 0.01W 0402
3902	4822 117 13606	10kΩ 5% 0.01W 0402
3903	4822 117 13545	100Ω 1% 0402
3904	4822 117 13545	100Ω 1% 0402
3A00	3198 031 06890	68Ω 5% 0402
3A01	3198 031 06890	68Ω 5% 0402
3A07	4822 117 13606	10kΩ 5% 0.01W 0402
3A08	4822 117 13606	10kΩ 5% 0.01W 0402
3A10	4822 117 13606	10kΩ 5% 0.01W 0402
3A11	4822 117 13606	10kΩ 5% 0.01W 0402
3A13	4822 117 13606	10kΩ 5% 0.01W 0402
3A14	3198 031 04720	4.7kΩ 5% 0402
3B01	4822 117 12706	10kΩ 1% 0.063W 0603
3B02	4822 117 12706	10kΩ 1% 0.063W 0603
3B03	2322 704 61501	150Ω 1% 0603
3C00	4822 117 13606	10kΩ 5% 0.01W 0402
3C01	4822 117 13606	10kΩ 5% 0.01W 0402
3C02	4822 117 13548	1kΩ 5% 0402
3C04	3198 031 11030	4 x 10kΩ 5% 1206
3C05	4822 117 13606	10kΩ 5% 0.01W 0402
3C06	3198 031 11030	4 x 10kΩ 5% 1206
3C07	3198 031 11030	4 x 10kΩ 5% 1206
3C08	3198 031 11030	4 x 10kΩ 5% 1206
3C09	3198 031 11030	4 x 10kΩ 5% 1206
3C10	3198 031 11030	4 x 10kΩ 5% 1206
3C16	3198 031 11030	4 x 10kΩ 5% 1206
3C17	4822 117 13606	10kΩ 5% 0.01W 0402
3C18	4822 117 13606	10kΩ 5% 0.01W 0402
3E00	2322 705 70569	56Ω 5% 0402
3E01	2322 705 70569	56Ω 5% 0402
3E02	2322 705 70569	56Ω 5% 0402
3E06	3198 031 04730	47Ω 5% 0402
3E07	3198 031 04730	47Ω 5% 0402
3E08	3198 031 04730	47Ω 5% 0402
3E09	3198 031 04730	47Ω 5% 0402
3E10	3198 031 04730	47Ω 5% 0402
3E11	3198 031 04730	47Ω 5% 0402
3E12	4822 117 13606	10kΩ 5% 0.01W 0402
3E13	4822 117 13597	330Ω 5% 0402 0.01W
3E14	4822 117 13597	330Ω 5% 0402 0.01W
3E15	4822 117 13597	330Ω 5% 0402 0.01W
3E16	4822 117 13597	330Ω 5% 0402 0.01W
3E17	4822 117 13597	330Ω 5% 0402 0.01W
3E18	4822 117 13597	330Ω 5% 0402 0.01W
3E19	2322 705 70569	56Ω 5% 0402
3E20	2322 705 70569	56Ω 5% 0402
3E21	2322 705 70569	56Ω 5% 0402
3E22	4822 117 13632	100kΩ 1% 0603 0.62W
3E23	3198 031 08210	820Ω 5% 0.5W
3E24	4822 117 13543	470Ω 5% 0402
3E25	2322 705 70399	39Ω 5% 0402
3E26	3198 031 02290	22Ω 5% 0.1W 0402
3E27	2322 705 70399	39Ω 5% 0402
3E28	3198 031 02290	22Ω 5% 0.1W 0402
3E29	2322 705 70399	39Ω 5% 0402
3E30	3198 031 02290	22Ω 5% 0.1W 0402
3E31	4822 117 13545	100Ω 1% 0402
3E32	4822 117 13545	100Ω 1% 0402
3E33	4822 117 13545	100Ω 1% 0402
3E34	4822 117 13545	100Ω 1% 0402
3E35	4822 117 13545	100Ω 1% 0402
3E36	4822 117 13545	100Ω 1% 0402
3E37	3198 031 02290	22Ω 5% 0.1W 0402
3E38	4822 117 13545	100Ω 1% 0402
3E39	4822 117 13545	100Ω 1% 0402
3E41	4822 117 13545	100Ω 1% 0402
3E42	4822 117 13545	100Ω 1% 0402
3E43	4822 117 13545	100Ω 1% 0402
3E44	4822 117 13545	100Ω 1% 0402
3E45	4822 117 13545	100Ω 1% 0402
3E49	3198 031 02290	22Ω 5% 0.1W 0402
3E50	3198 031 04730	47Ω 5% 0402
3E51	3198 031 04730	47Ω 5% 0402
3E52	3198 031 04730	47Ω 5% 0402
3E53	3198 031 04730	47Ω 5% 0402
3E54	3198 031 04730	47Ω 5% 0402
3E55	3198 031 04730	47Ω 5% 0402
3F00	4822 051 30759	75Ω 5% 0.062W
3F09	4822 051 30759	75Ω 5% 0.062W
3F10	3198 021 31080	1Ω 5% 0603
3F11	4822 051 30759	75Ω 5% 0.062W
3F16	4822 051 30103	10kΩ 5% 0.062W
3F17	4822 051 30103	10kΩ 5% 0.062W
3F18	4822 051 30103	10kΩ 5% 0.062W
3F19	3198 021 31080	1Ω 5% 0603
3F20	4822 051 30101	100Ω 5% 0.062W
3F21	4822 051 30102	1kΩ 5% 0.062W
3F22	4822 051 30103	10kΩ 5% 0.062W
3F23	4822 051 30102	1kΩ 5% 0.062W
3F24	4822 051 30103	10kΩ 5% 0.062W
3F25	4822 051 30103	10kΩ 5% 0.062W
3F26	4822 051 30153	15kΩ 5% 0.062W
3F27	4822 051 30153	15kΩ 5% 0.062W
3F28	4822 051 30101	100Ω 5% 0.062W
3F29	4822 051 30101	100Ω 5% 0.062W
3G00	4822 051 30151	150Ω 5% 0.062W
3G01	4822 051 30103	10kΩ 5% 0.062W
3G02	4822 117 12891	220kΩ 1%
3G03	4822 051 30153	15kΩ 5% 0.062W
3G04	4822 051 30151	150Ω 5% 0.062W
3G05	4822 051 30103	10kΩ 5% 0.062W
3G06	4822 117 12891	220kΩ 1%
3G07	4822 051 30153	15kΩ 5% 0.062W
3G08	4822 051 30151	150Ω 5% 0.062W
3G12	2122 118 06408	91Ω 5% 0603
3G13	2122 118 06408	91Ω 5% 0603
3G14	2122 118 06408	91Ω 5% 0603
3G15	4822 051 30101	100Ω 5% 0.062W
3G16	4822 051 30101	100Ω 5% 0.062W
3G17	4822 051 30101	100Ω 5% 0.062W
3G26	4822 051 30273	27kΩ 5% 0.062W
3G27	4822 051 30682	6.8Ω 5% 0.062W
3G28	4822 051 30759	75Ω 5% 0.062W
3G29	4822 051 30331	330Ω 5% 0.062W
3G30	4822 051 30689	68Ω 5% 0.063W 0603
3G31	4822 051 30759	75Ω 5% 0.062W
3G32	4822 051 30102	1kΩ 5% 0.062W
3G33	4822 051 30101	100Ω 5% 0.062W
3G34	4822 051 30102	1kΩ 5% 0.062W
3G37	4822 051 30151	150Ω 5% 0.062W
3G38	4822 051 30103	10kΩ 5% 0.062W
3G39	4822 117 12891	220kΩ 1%
3G40	4822 051 30153	15kΩ 5% 0.062W
3G41	4822 051 30151	150Ω 5% 0.062W
3G42	4822 051 30103	10kΩ 5% 0.062W
3G43	4822 117 12891	220kΩ 1%
3G44	4822 051 30153	15kΩ 5% 0.062W
3G45	4822 051 30759	75Ω 5% 0.062W
3G46	4822 051 30101	100Ω 5% 0.062W
3G47	4822 117 12925	47kΩ 1% 0.063W 0603
3G48	4822 117 12925	47kΩ 1% 0.063W 0603
3G51	4822 051 30273	27kΩ 5% 0.062W
3G52	4822 051 30682	6.8Ω 5% 0.062W
3G53	4822 051 30689	68Ω 5% 0.063W 0603
3G54	4822 051 30102	1kΩ 5% 0.062W
3G57	4822 051 30759	75Ω 5% 0.062W
3G58	4822 051 30101	100Ω 5% 0.062W
3G59	4822 117 12925	47kΩ 1% 0.063W 0603
3G60	4822 117 12925	47kΩ 1% 0.063W 0603
3G96	4822 117 12925	47kΩ 1% 0.063W 0603
3G99	4822 117 12925	47kΩ 1% 0.063W 0603
3J05	3198 031 06890	68Ω 5% 0402
3K00	4822 117 13545	100Ω 1% 0402
3K01	4822 117 13545	100Ω 1% 0402
3K02	4822 117 13606	10kΩ 5% 0.01W 0402
3K03	3198 031 01530	15kΩ 5% 0.01W 0402
3K05	4822 117 13606	10kΩ 5% 0.01W 0402
3K06	3198 031 01530	15kΩ 5% 0.01W 0402
3K07	2322 705 70399	39Ω 5% 0402
3K09	2322 705 70399	39Ω 5% 0402
3K11	3198 031 06890	68Ω 5% 0402
3K12	3198 031 06890	68Ω 5% 0402
3K13	3198 031 06890	68Ω 5% 0402
3L00	4822 117 13548	1kΩ 5% 0402
3L04	4822 117 13605	Jumper 0402
3L05	3198 031 01510	150Ω 5% 0.01W 0402
3L06	4822 117 13605	Jumper 0402
3L10	4822 117 13597	330Ω 5% 0402 0.01W
3L11	3198 031 01510	150Ω 5% 0.01W 0402
3L12	4822 117 13548	1kΩ 5% 0402
3L16	4822 117 13605	Jumper 0402
3L17	3198 031 01510	150Ω 5% 0.01W 0402
3L19	3198 031 01510	150Ω 5% 0.01W 0402
3L20	3198 031 01510	150Ω 5% 0.01W 0402
3L21	4822 117 13602	2.2kΩ 5% 0.01W 0402
3L22	4822 117 13602	2.2kΩ 5% 0.01W 0402
3L24	4822 117 13602	2.2kΩ 5% 0.01W 0402
3L25	2350 035 10229	4 x 22Ω 5% 1206
3L26	2350 035 10229	4 x 22Ω 5% 1206
3L27	2350 035 10229	4 x 22Ω 5% 1206
3L28	2350 035 10229	4 x 22Ω 5% 1206
3L30	3198 031 02290	22Ω 5% 0.1W 0402
3L31	3198 031 02290	22Ω 5% 0.1W 0402
3L32	4822 117 13602	2.2kΩ 5% 0.01W 0402
3L33	4822 117 13596	220Ω 5% 0.01W 0402
3L34	4822 117 13605	Jumper 0402
3L35	4822 117 13596	220Ω 5% 0.01W 0402
3L36	3198 031 03320	3.3kΩ 5% 0402
3L37	3198 031 03320	3.3kΩ 5% 0402
3M01	2350 035 10689	4 x 68Ω 5%
3M02	2350 035 10689	4 x 68Ω 5%
3M03	2350 035 10689	4 x 68Ω 5%
3M04	2350 035 10689	4 x 68Ω 5%
3M06	2350 035 10229	4 x 22Ω 5% 1206
3M07	2350 035 10229	4 x 22Ω 5% 1206
3M08	2350 035 10229	4 x 22Ω 5% 1206
3M09	2350 035 10229	4 x 22Ω 5% 1206
3M11	3198 031 04720	4.7kΩ 5% 0402
3M13	3198 031 04720	4.7kΩ 5% 0402
3M14	4822 117 13545	100Ω 1% 0402
3M15	4822 117 13545	100Ω 1% 0402
3M16	3198 031 04720	4.7kΩ 5% 0402
3M26	4822 117 13605	Jumper 0402
3M27	4822 117 13605	Jumper 0402
3M50	4822 117 13606	10kΩ 1% 0.01W 0402
3M51	4822 117 13606	10kΩ 1% 0.01W 0402
3M52	4822 117 13606	10kΩ 1% 0.01W 0402
3M53	4822 117 13546	47Ω 5% 0402
3M54	4822 117 13546	47Ω 5% 0402
3M55	4822 117 13546	47Ω 5% 0402
3M56	4822 117 13606	10kΩ 1% 0.01W 0402
3M57	4822 117 13546	47Ω 5% 0402
3M58	4822 117 13606	10kΩ 1% 0.01W 0402
3M59	4822 117 13546	47Ω 5% 0402
3M78	4822 117 13548	1kΩ 5% 0402
3M79	3198 031 03320	3.3kΩ 5% 0402

3M87	4822 117 13605	Jumper 0402
3M89	3198 031 02290	22Ω 5% 0.1W 0402
3M90	3198 031 02290	22Ω 5% 0.1W 0402
3N01	4822 117 13606	10kΩ 5% 0.01W 0402
3N02	4822 117 13606	10kΩ 5% 0.01W 0402
3N03	4822 117 13606	10kΩ 5% 0.01W 0402
3N04	4822 117 13606	10kΩ 5% 0.01W 0402
3N05	4822 117 13606	10kΩ 5% 0.01W 0402
3N06	4822 117 13606	10kΩ 5% 0.01W 0402
3N07	4822 051 30333	33kΩ 5% 0.062W
3N08	4822 117 13606	10kΩ 5% 0.01W 0402
3N09	4822 117 13548	1kΩ 5% 0402
3N10	4822 117 13603	33kΩ 5% 0402
3N11	4822 117 13546	47Ω 5% 0402
3N12	4822 117 13606	10kΩ 5% 0.01W 0402
3N13	4822 117 13606	10kΩ 5% 0.01W 0402
3N14	4822 117 13606	10kΩ 5% 0.01W 0402
3N15	4822 117 13546	47Ω 5% 0402
3N16	4822 117 13546	47Ω 5% 0402
3N17	4822 117 13546	47Ω 5% 0402
3N18	4822 117 13546	47Ω 5% 0402
3N19	4822 117 13606	10kΩ 5% 0.01W 0402
3N20	4822 117 13546	47Ω 5% 0402
3N21	4822 117 13545	100Ω 1% 0402
3N22	4822 117 13545	100Ω 1% 0402
3N23	4822 117 13545	100Ω 1% 0402
3N24	4822 117 13545	100Ω 1% 0402
3N25	4822 117 13545	100Ω 1% 0402
3N26	3198 031 04720	4.7kΩ 5% 0402
3N27	4822 117 13546	47Ω 5% 0402
3N28	4822 051 30181	180Ω 5% 0.062W
3N29	4822 117 13545	100Ω 1% 0402
3N30	4822 117 13545	100Ω 1% 0402
3N31	4822 117 13545	100Ω 1% 0402
3N32	4822 117 13545	100Ω 1% 0402
3N33	4822 117 13545	100Ω 1% 0402
3N34	4822 117 13545	100Ω 1% 0402
3N35	4822 117 13545	100Ω 1% 0402
3N46	4822 117 13545	100Ω 1% 0402
3N47	4822 117 13545	100Ω 1% 0402
3P01	3198 031 04720	4.7kΩ 5% 0402
3P03	4822 117 13546	47Ω 5% 0402
3P04	4822 117 13545	100Ω 1% 0402
3P04	4822 117 13605	Jumper 0402
3P05	4822 117 13545	100Ω 1% 0402
3P05	4822 117 13605	Jumper 0402
3S00	4822 117 12925	47kΩ 1% 0.063W 0603
3S03	4822 117 12925	47kΩ 1% 0.063W 0603
4211	4822 117 13605	Jumper 0402
4212	4822 117 13605	Jumper 0402
4440	4822 117 13605	Jumper 0402
4441	4822 117 13605	Jumper 0402
4501	4822 117 13605	Jumper 0402
4502	4822 117 13605	Jumper 0402
4504	4822 117 13605	Jumper 0402
4511	4822 117 13605	Jumper 0402
4801	4822 117 13605	Jumper 0402
4A04	4822 117 13605	Jumper 0402
4J01	4822 117 13605	Jumper 0402
4K04	4822 117 13605	Jumper 0402
4K05	4822 117 13605	Jumper 0402
4L02	4822 117 13605	Jumper 0402
4M00	4822 117 13605	Jumper 0402
4M01	4822 117 13605	Jumper 0402
4M02	4822 117 13605	Jumper 0402
4M03	4822 117 13605	Jumper 0402
4M05	4822 117 13605	Jumper 0402
4M08	4822 117 13605	Jumper 0402
4M09	4822 117 13605	Jumper 0402
4M10	4822 117 13605	Jumper 0402
4M16	4822 117 13605	Jumper 0402
4M17	4822 117 13605	Jumper 0402
4N01	4822 117 13605	Jumper 0402
4N02	4822 117 13605	Jumper 0402
4N03	4822 117 13605	Jumper 0402
4N04	4822 117 13605	Jumper 0402
4N05	4822 117 13605	Jumper 0402
4N06	4822 117 13605	Jumper 0402
4N07	4822 117 13605	Jumper 0402
4N08	4822 117 13605	Jumper 0402
4N09	4822 117 13605	Jumper 0402
4N10	4822 117 13605	Jumper 0402
4N11	4822 117 13605	Jumper 0402
4N12	4822 117 13605	Jumper 0402
4N13	4822 117 13605	Jumper 0402
4N14	4822 117 13605	Jumper 0402
4N15	4822 117 13605	Jumper 0402
4N16	4822 117 13605	Jumper 0402
4N17	4822 117 13605	Jumper 0402
4N18	4822 117 13605	Jumper 0402
4N19	4822 117 13605	Jumper 0402
4N20	4822 117 13605	Jumper 0402
4N21	4822 117 13605	Jumper 0402
4N22	4822 117 13605	Jumper 0402
4P07	4822 117 13605	Jumper 0402

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5101	3198 018 33970	0.39µF 10% 0805
5103	4822 157 71334	0.68µH 5% 1008
5107	4822 051 30101	100Ω 5% 0.062W
5108	4822 051 30101	100Ω 5% 0.062W
5201	4822 157 11716	Bead 30Ω at 100MHz
5202	4822 157 11716	Bead 30Ω at 100MHz
5203	4822 157 11716	Bead 30Ω at 100MHz
5204	2422 549 42896	Bead 120Ω 100MHz
5205	4822 157 11716	Bead 30Ω at 100MHz
5206	4822 157 11716	Bead 30Ω at 100MHz
5207	2422 549 42896	Bead 120Ω 100MHz
5208	4822 157 11716	Bead 30Ω at 100MHz
5209	4822 157 11716	Bead 30Ω at 100MHz
5210	4822 157 11716	Bead 30Ω at 100MHz
5211	4822 157 11716	Bead 30Ω at 100MHz
5212	4822 157 11716	Bead 30Ω at 100MHz
5213	4822 157 11716	Bead 30Ω at 100MHz
5214	2422 536 00667	1000µF 20% 7032
5216	4822 157 11716	Bead 30Ω at 100MHz
5218▲	2422 549 45333	Bead 120Ω 100MHz
5501	3198 018 31080	1µF 10% 0805
5704	4822 157 63635	10µF 20% 1206
5709	2422 535 94134	10µH 20% 0805
5712	2422 536 00339	33µ 20%
5713	2422 535 94995	10µF 20% 10145
5730	2422 535 94134	10µH 20% 0805
5733	2422 536 00689	220µF 20%
5735	2422 536 00667	1000µF 20% 7032
5737	2422 535 94134	10µH 20% 0805
5738	2422 549 45333	Bead 120Ω 100MHz
5752	2422 535 94134	10µH 20% 0805
5753	2422 536 00689	220µF 20%
5754	2422 535 94134	10µH 20% 0805
5900	2422 549 45333	Bead 120Ω 100MHz
5901	2422 549 45333	Bead 120Ω 100MHz
5902	2422 549 45333	Bead 120Ω 100MHz
5903	2422 549 45333	Bead 120Ω 100MHz
5904	2422 549 45333	Bead 120Ω 100MHz
5905	2422 549 45333	Bead 120Ω 100MHz
5906	2422 549 45333	Bead 120Ω 100MHz
5907	2422 549 45333	Bead 120Ω 100MHz
5908	2422 549 45333	Bead 120Ω 100MHz
5909	2422 549 45333	Bead 120Ω 100MHz
5910	2422 549 45333	Bead 120Ω 100MHz
5911	2422 549 45333	Bead 120Ω 100MHz
5A00	4822 157 11716	Bead 30Ω at 100MHz
5C00	2422 549 45333	Bead 120Ω 100MHz
5E00	2422 549 45333	Bead 120Ω 100MHz
5E01	2422 549 45333	Bead 120Ω 100MHz
5E02	2422 549 45333	Bead 120Ω 100MHz
5E03	2422 549 45333	Bead 120Ω 100MHz
5F00	2422 549 45333	Bead 120Ω 100MHz
5F01	2422 549 45333	Bead 120Ω 100MHz
5F02	2422 549 45333	Bead 120Ω 100MHz
5F03	2422 549 45333	Bead 120Ω 100MHz
5G02	2422 549 45333	Bead 120Ω 100MHz
5J01	2422 549 42896	Bead 120Ω 100MHz
5J02	2422 549 42896	Bead 120Ω 100MHz
5J03	2422 549 45333	Bead 120Ω 100MHz
5J04	2422 549 45333	Bead 120Ω 100MHz
5L00	2422 549 45333	Bead 120Ω 100MHz
5L01	2422 549 45333	Bead 120Ω 100MHz
5L02	2422 549 45333	Bead 120Ω 100MHz
5M00	2422 549 45333	Bead 120Ω 100MHz
5M01	2422 549 45333	Bead 120Ω 100MHz
5M02	2422 549 45333	Bead 120Ω 100MHz
5M03	2422 549 45333	Bead 120Ω 100MHz
5M04	2422 549 45333	Bead 120Ω 100MHz
5M05	2422 549 45333	Bead 120Ω 100MHz
5N01	4822 157 11716	Bead 30Ω at 100MHz
5N02	4822 157 11716	Bead 30Ω at 100MHz
5N03	4822 157 11716	Bead 30Ω at 100MHz
5N04	4822 157 11716	Bead 30Ω at 100MHz
5N05	4822 157 11716	Bead 30Ω at 100MHz
5P01	4822 157 11716	Bead 30Ω at 100MHz
5P02	4822 157 11716	Bead 30Ω at 100MHz
5P03	4822 157 11716	Bead 30Ω at 100MHz
5P04	4822 157 11716	Bead 30Ω at 100MHz
5P05	4822 157 11716	Bead 30Ω at 100MHz
5P06	4822 157 11716	Bead 30Ω at 100MHz

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6101	4822 130 11416	PDZ6.8B
6102	4822 130 11416	PDZ6.8B
6103	4822 130 11397	BAS316
6104	4822 130 11525	1SS356
6204	4822 130 80622	BAT54
6205	4822 130 80622	BAT54
6430	9340 548 42115	PDZ2.4B
6431	9965 000 20150	1N4148WS SOD-323
6601	4822 130 10838	UDZ3.3B
6708	3198 010 10720	SS24
6709	9322 128 70685	SMSS14
6712	3198 010 10730	SS36
6733	9322 128 70685	SMSS14
6735	5322 130 34337	BAV99
6736	9340 548 71115	PDZ33B
6740	4822 130 10837	UDZS8.2B
6751	9322 128 70685	SMSS14
6E01	9322 102 64685	UDZ2.7B
6E03	9322 102 64685	UDZ2.7B
6F00	4822 130 11397	BAS316
6F01	4822 130 11397	BAS316
6G03	4822 130 11416	PDZ6.8B
6G04	4822 130 11416	PDZ6.8B
6G05	4822 130 11416	PDZ6.8B
6G06	4822 130 11416	PDZ6.8B
6G07	4822 130 11416	PDZ6.8B
6G08	4822 130 11416	PDZ6.8B
6G09	4822 130 11416	PDZ6.8B
6G10	4822 130 11416	PDZ6.8B
6N01	9322 085 77685	TLMG3100

Software 42PF5520D/10 (See Product Survey)

7050	3139 127 06351	
7051	3139 127 05623	
7055	3104 317 08891	For LG Sets
7055	3104 317 08881	For SDI Sets

Software 42PF7520D/10 (See Product Survey)

7050	3139 127 04359	For SDI Sets
7050	3139 127 06351	For FHP Sets
7051	3104 317 09051	For SDI Sets
7051	3139 127 05862	For FHP Sets
7052	3104 317 09141	For SDI & FHP Sets
7055	3104 317 08881	For SDI Sets
7055	3139 127 05841	For FHP Sets

7101	3198 010 42310	BC847BW
7201	9340 550 49115	PUMH7
7202	9340 550 49115	PUMH7
7206	4822 130 60373	BC856B
7207	9322 214 45668	M24C16-WMN6P
7208	3198 010 42310	BC847BW
7209	3198 010 42310	BC847BW
7210	3198 010 42310	BC847BW
7214	9339 693 90135	BCP69-25
7215	9339 693 90135	BCP69-25
7216	9340 425 20115	BC847BS
7217		For SW see item 705D
7219▲	4822 209 60792	74HC4053D
7430	4822 130 11155	PDTC114ET
7436	9352 607 39118	74LVC14APW
7501	9322 199 16668	M74HC590T
7502	9322 201 05671	CY62256LL-70ZC
7503	9322 199 16668	M74HC590T
7504	3198 010 42310	BC847BW
7505	9351 870 00118	74HC573PW
7506	9351 870 00118	74HC573PW
7601	9322 183 05668	TS482ID
7602	9351 742 70118	74HC08PW
7603	3198 010 42310	BC847BW
7604	3198 010 42310	BC847BW
7605	9340 310 50215	PDTA143ET
7606	9340 425 20115	BC847BS
7708	9322 139 16668	LF33CPT
7710	9322 202 34668	L5973D
7730	9322 191 07668	IC SM L5970D
7735	4822 130 42804	BC817-25
7738	9322 163 24668	L78M08CDT
7741	3198 010 42310	BC847BW
7742	3198 010 42310	BC847BW
7752	5322 209 90529	MC34063AD
7756	4822 130 11155	PDTC114ET
7758	9322 212 14668	Si4423DY
7801	9322 219 57671	GM1501H-LF-BD
7900	9322 142 88668	LF25CDT
7901	9322 189 19668	LD1086D2T18
7A00	9352 759 98118	PCA9515ADP
7A02	3198 010 42310	BC847BW
7A03	3198 010 42310	BC847BW
7B01	9322 214 42671	K4D263238F-QC50

7C00		For SW see item 7051
7C01	9322 206 23668	M24C32-WMN6P
7C02	9322 215 39685	PST596JN
7E00	9322 195 23668	ADG733BRU
7E01	9322 199 80668	SM5301BS-G
7E02	9322 199 56668	ADG781BCP
7E03	4822 209 60792	74HC4053D
7E04	9352 607 39118	74LVC14APW
7E05	9352 607 39118	74LVC14APW
7F03		For SW see item 7055
7G03	3198 010 42310	BC847BW
7G05	3198 010 42310	BC847BW
7G10	4822 209 60792	74HC4053D
7L01	3198 010 42310	BC847BW
7L02	3198 010 42310	BC847BW
7L03	3198 010 42310	BC847BW
7L04	9322 212 77672	MST9883C-LF-110
7L05	4822 209 17398	LD1117DT33
7L06	9965 000 04199	BSN20
7L07	9965 000 04199	BSN20
7M00	9322 204 76671	T6TU5XBG-0001
7M01	9322 206 19672	MSM56V16160F-7T3-FG
7M03	9322 170 14668	LF15ABDT
7N01		For SW see item 7055
7N02	9322 217 35671	EP1C12F256C8N
7N03	9340 425 20115	BC847BS
7N04	9322 210 59668	THC63LVDF84B
7P01	9322 170 14668	LF15ABDT
7P02	9322 201 03668	THC63LVDM83R

PDP Audio [C]

Various

1735	4822 267 10918	Connector 3p
1736	2422 025 10768	Connector 3p m
1M02	4822 267 10618	Connector 7p
1M06	2422 025 11244	Connector 7p m
1M52	2422 025 10769	Connector 9p m

⊣⊢

2700	4822 126 14247	1.5nF 50V 0603
2701	4822 126 14249	560pF 10% 50V 0603
2703	2020 552 96683	220nF 10% 50V
2704	4822 124 11767	470µF 20% 25V
2705	4822 126 14249	560pF 10% 50V 0603
2706	5322 126 11579	3.3nF 10% 63V
2707	2222 580 15649	100nF 10% 50V 0805
2709	2020 552 96683	220nF 10% 50V
2710	2020 552 96683	220nF 10% 50V
2711	2022 552 05679	1µF 10% 16V 0805
2712	4822 126 14583	470nF 10% 16V 0805
2713	4822 126 13193	4.7nF 10% 63V
2715	4822 121 51252	470nF 5% 63V
2716	3198 017 31530	15nF 20% 50V 0603
2717	2022 552 05679	1µF 10% 16V 0805
2718	2222 580 15649	100nF 10% 50V 0805
2719	4822 126 14583	470nF 10% 16V 0805
2720	2020 021 91431	22µF 20% 100V
2721	2222 580 15649	100nF 10% 50V 0805
2722	4822 126 14583	470nF 10% 16V 0805
2723	2022 552 05679	1µF 10% 16V 0805
2726	4822 126 13193	4.7nF 10% 63V
2727	4822 126 14249	560pF 10% 50V 0603
2731	4822 126 14249	560pF 10% 50V 0603
2732	4822 126 14583	470nF 10% 16V 0805
2736	4822 121 51252	470nF 5% 63V
2737	3198 017 31530	15nF 20% 50V 0603
2739	2222 580 15649	100nF 10% 50V 0805
2741	4822 126 13883	220pF 5% 50V
2743	3198 016 31020	1nF 25V 0603
2744	2222 580 15649	100nF 10% 50V 0805
2745	2020 552 96683	220nF 10% 50V
2746	4822 124 11767	470µF 20% 25V
2747	2022 552 05679	1µF 10% 16V 0805
2748	4822 126 14247	1.5nF 50V 0603
2749	5322 126 11579	3.3nF 10% 63V
2751	4822 124 40433	47µF 20% 25V
2754	2020 021 91431	22µF 20% 100V
2770	3198 017 41050	1µF 10V 0603
2776	2020 021 91431	22µF 20% 100V
2780	4822 126 14583	470nF 10% 16V 0805
2789	4822 126 14583	470nF 10% 16V 0805
2791	4822 126 13879	220nF +80-20% 16V

⊣⊢

3700	4822 051 30561	560Ω 5% 0.062W
3701	4822 051 30479	47Ω 5% 0.062W
3702	3198 021 38220	8.2kΩ 5% 0.062W 0603
3703	3198 021 38220	8.2kΩ 5% 0.062W 0603
3704	4822 117 13632	100kΩ 1% 0603 0.62W
3705	4822 051 30222	2.2kΩ 5% 0.062W
3706	4822 051 30682	6.8Ω 5% 0.062W
3707	4822 051 30393	39kΩ 5% 0.062W
3708	4822 051 30479	47Ω 5% 0.062W
3709	4822 051 30272	2.7kΩ 5% 0.062W
3710	4822 051 30393	39kΩ 5% 0.062W
3711	2322 762 60568	5.6Ω 5% 5% 2512
3712	4822 051 30272	2.7kΩ 5% 0.062W
3713	4822 051 30332	3.3Ω 5% 0.062W
3714	4822 051 30682	6.8Ω 5% 0.062W
3715	2322 762 60568	5.6Ω 5% 5% 2512
3716	4822 117 13632	100kΩ 1% 0603 0.62W
3717	4822 051 30222	2.2kΩ 5% 0.062W
3718	4822 051 30561	560Ω 5% 0.062W
3719	4822 051 30124	120kΩ 5% 0.062W
3720	4822 051 30479	47Ω 5% 0.062W
3721	4822 051 30471	47Ω 5% 0.062W
3722	4822 051 30124	120kΩ 5% 0.062W
3723	4822 051 30471	47Ω 5% 0.062W
3724	4822 051 30102	1kΩ 5% 0.062W
3725	4822 117 12925	47kΩ 1% 0.063W 0603
3726	4822 051 30153	15kΩ 5% 0.062W
3727	4822 051 30103	10kΩ 5% 0.062W
3728	4822 051 30153	15kΩ 5% 0.062W
3729	4822 117 12925	47kΩ 1% 0.063W 0603
3730	4822 051 30223	22kΩ 5% 0.062W
3731	4822 051 30102	1kΩ 5% 0.062W
3732	4822 051 30223	22kΩ 5% 0.062W
3733	4822 051 30562	5.6kΩ 5% 0.063W 0603
3734	4822 051 30223	22kΩ 5% 0.062W
3735	4822 117 12889	270kΩ 1% 0.063W 0603
3736	4822 117 12925	47kΩ 1% 0.063W 0603
3737	4822 117 12925	47kΩ 1% 0.063W 0603
3738	4822 117 13632	100kΩ 1% 0603 0.62W
3760	4822 051 30223	22kΩ 5% 0.062W
3764	4822 117 13632	100kΩ 1% 0603 0.62W
3765	4822 117 13632	100kΩ 1% 0603 0.62W
3777	4822 051 30102	1kΩ 5% 0.062W
3778	4822 051 30479	47Ω 5% 0.062W
3999	4822 051 30472	4.7Ω 5% 0.062W
9710	4822 051 20008	Jumper 0805
9711	4822 051 20008	Jumper 0805
9712	4822 051 20008	Jumper 0805
9713	4822 051 20008	Jumper 0805
9748	4822 051 20008	Jumper 0805
9757	4822 051 20008	Jumper 0805
9758	4822 051 20008	Jumper 0805
9759	4822 051 20008	Jumper 0805
9760	4822 051 20008	Jumper 0805
9761	4822 051 20008	Jumper 0805
9762	4822 051 20008	Jumper 0805
9763	4822 051 20008	Jumper 0805
9764	4822 051 20008	Jumper 0805
9765	4822 051 20008	Jumper 0805
9766	4822 051 20008	Jumper 0805
9768	4822 051 20008	Jumper 0805
9770	4822 051 20008	Jumper 0805
9790	4822 051 20008	Jumper 0805
9795	4822 051 20008	Jumper 0805
9796	4822 051 20008	Jumper 0805
9806	4822 051 20008	Jumper 0805
9807	4822 051 20008	Jumper 0805
9808	4822 051 20008	Jumper 0805

⌁

5700	2422 536 00942	33µH 20%
5701	4822 157 11716	Bead 30Ω at 100MHz
5702	2422 536 00942	33µH 20%
5705	4822 157 11411	Bead 80Ω at 100MHz
5708	4822 157 11411	Bead 80Ω at 100MHz

⊳⊢

6700	4822 130 11522	UDZ15B
6702	9322 150 18685	BZX384-C47
6703	4822 130 10838	UDZ3.3B

7700	9322 202 89668	LM393P
7701	9352 729 65112	TDA8925ST/N1
7702	3198 010 42310	BC847BW
7705	3198 010 42310	BC847BW
7706	3198 010 42310	BC847BW
7707	3198 010 42310	BC847BW
7708	3198 010 42320	BC857BW
7709	3198 010 42310	BC847BW
7710	3198 010 42310	BC847BW
7711	3198 010 42320	BC857BW
7712	3198 010 42310	BC847BW
7713	3198 010 42310	BC847BW

LED Panel [J]

Various

0345	2422 025 18741	Connector 6p m
1040	9322 206 81667	TSOP34836YA1

⊣⊢

2040	4822 124 12095	100µF 20% 16V

⌇⌇

3040	4822 117 13597	330Ω 5% 0402 0.01W
3051	4822 051 30221	220Ω 5% 0.062W
3061	4822 051 30221	220Ω 5% 0.062W
3063	4822 117 13606	10kΩ 5% 0.01W 0402
3078	3198 031 02250	2.2MΩ 5% 0.1W 0402
9012	4822 117 13605	Jumper 0402
9041	4822 117 13605	Jumper 0402
9042	4822 117 13605	Jumper 0402
9062	4822 117 13605	Jumper 0402
9066	4822 117 13606	10kΩ 5% 0.01W 0402
9070	4822 117 13605	Jumper 0402
9081	4822 117 13605	Jumper 0402
9082	4822 117 13605	Jumper 0402
9111	4822 117 13605	Jumper 0402
9112	4822 117 13605	Jumper 0402
9115	4822 117 13605	Jumper 0402
9122	4822 117 13605	Jumper 0402

⊳⊢

6051	9322 218 97685	SML-310VTK
6060	9322 134 46685	SML-310MT
6070	9322 140 63685	TEMD5000

7051	3198 010 42310	BC847BW
7052	3198 010 42310	BC847BW
7062	4822 130 60373	BC858B

IBO Zapper Panel [K]

Various

1301	2422 025 10768	Connector 3p m
1304	4822 252 51187	1939ΩE1(0,500A)
1401	4822 267 31729	Connector cinch 1p
1402	4822 267 10459	Connector 3p
1403	2422 025 18799	Socket USB 4p f
1500	2422 025 18872	Connector 32p f
1600	3112 297 13381	TUNER TD1316/SPHP
1700	2422 033 00364	Connector smartcard
8301	3139 110 27701	Cable03P/480/03P
8500	3139 131 06221	Cable32P/400/32P
8600	3139 131 05451	Cable3-40

⊣⊢

2100	4822 124 23002	10µF16V
2101	4822 124 23002	10µF16V
2102	4822 124 23002	10µF16V
2103	2238 586 59812	100nF20% 50V 0603
2104	2238 586 59812	100nF20% 50V 0603
2105	2238 586 59812	100nF20% 50V 0603
2106	2238 586 59812	100nF20% 50V 0603
2107	2238 586 59812	100nF20% 50V 0603
2108	2238 586 59812	100nF20% 50V 0603
2109	2238 586 59812	100nF20% 50V 0603
2110	2238 586 59812	100nF20% 50V 0603
2111	2238 586 59812	100nF20% 50V 0603
2112	2238 586 59812	100nF20% 50V 0603
2113	2238 586 59812	100nF20% 50V 0603
2114	2238 586 59812	100nF20% 50V 0603
2115	2238 586 59812	100nF20% 50V 0603
2116	2238 586 59812	100nF20% 50V 0603
2119	2238 586 59812	100nF20% 50V 0603
2120	2238 586 59812	100nF20% 50V 0603
2121	2238 586 59812	100nF20% 50V 0603
2130	4822 124 23002	10µF16V
2131	4822 124 23002	10µF16V
2132	4822 124 23002	10µF16V
2133	4822 124 23002	10µF16V

2131	4822 124 23002	10µF 16V
2132	4822 124 23002	10µF 16V
2133	4822 124 23002	10µF 16V
2203	4822 124 23002	10µF 16V
2204	2238 586 59812	100nF 20% 50V 0603
2206	4822 124 23002	10µF 16V
2207	2238 586 59812	100nF 20% 50V 0603
2208	2238 586 59812	100nF 20% 50V 0603
2209	2238 586 59812	100nF 20% 50V 0603
2210	2238 586 59812	100nF 20% 50V 0603
2211	2238 586 59812	100nF 20% 50V 0603
2212	2238 586 59812	100nF 20% 50V 0603
2213	2238 586 59812	100nF 20% 50V 0603
2214	2238 586 59812	100nF 20% 50V 0603
2300	4822 126 13881	470pF 5% 50V
2301	4822 124 40849	330UF 20% 16V
2302	4822 124 40207	100µF 20% 25V
2304	2020 021 91506	1000µF 20% 16V
2305	2238 586 59812	100nF 20% 50V 0603
2306	4822 124 40207	100µF 20% 25V
2308	4822 126 13881	470pF 5% 50V
2309	4822 124 40849	330UF 20% 16V
2311	2020 021 91687	470µF 20% 16V
2313	4822 126 13881	470pF 5% 50V
2314	3198 017 33330	33nF 20% 16V 0603
2315	4822 124 40849	330UF 20% 16V
2317	4822 124 40207	100µF 20% 25V
2318	2020 021 91687	470µF 20% 16V
2319	2020 021 91634	100µF 25V
2320	2238 586 59812	100nF 20% 50V 0603
2324	3198 017 44740	470nF 10V 0603
2325	3198 017 44740	470nF 10V 0603
2326	3198 017 44740	470nF 10V 0603
2327	2238 586 59812	100nF 20% 50V 0603
2328	2238 586 59812	100nF 20% 50V 0603
2329	4822 126 13193	4.7nF 10% 63V
2330	2020 021 91687	470µF 20% 16V
2331	4822 126 13193	4.7nF 10% 63V
2332	4822 124 40207	100µF 20% 25V
2333	5322 126 11583	10nF 10% 50V 0603
2334	2238 586 59812	100nF 20% 50V 0603
2335	4822 124 12095	100µF 20% 16V
2336	4822 126 13193	4.7nF 10% 63V
2337	4822 124 11947	10µF 20% 16V
2337	4822 124 22652	2.2µF 20% 50V
2403	2238 586 59812	100nF 20% 50V 0603
2405	2238 586 59812	100nF 20% 50V 0603
2406	3198 032 27190	100µF 6.3V
2411	2238 586 59812	100nF 20% 50V 0603
2412	2238 586 59812	100nF 20% 50V 0603
2413	2238 586 59812	100nF 20% 50V 0603
2500	3198 017 41050	1µF 10V 0603
2501	2020 552 94427	100pF 5% 50V
2502	2238 586 59812	100nF 20% 50V 0603
2503	2020 552 94427	100pF 5% 50V
2504	2238 586 59812	100nF 20% 50V 0603
2505	3198 017 41050	1µF 10V 0603
2506	4822 124 12084	1µF 20% 50V
2507	4822 126 13193	4.7nF 10% 63V
2508	3198 017 41050	1µF 10V 0603
2509	2020 552 94427	100pF 5% 50V
2510	2020 552 94427	100pF 5% 50V
2511	2238 586 59812	100nF 20% 50V 0603
2512	4822 124 80151	47µF 16V
2513	3198 017 41050	1µF 10V 0603
2514	4822 124 12084	1µF 20% 50V
2515	4822 126 13193	4.7nF 10% 63V
2520	4822 122 33761	22pF 5% 50V
2521	4822 122 33761	22pF 5% 50V
2522	4822 126 14315	390pF 5% 50V 0603
2523	4822 126 14315	390pF 5% 50V 0603
2524	4822 122 33761	22pF 5% 50V
2525	4822 126 14315	390pF 5% 50V 0603
2526	4822 126 14315	390pF 5% 50V 0603
2527	4822 122 33761	22pF 5% 50V
2528	4822 122 33761	22pF 5% 50V
2529	4822 122 33761	22pF 5% 50V
2530	4822 126 14315	390pF 5% 50V 0603
2531	4822 126 14315	390pF 5% 50V 0603
2532	4822 122 33761	22pF 5% 50V
2533	4822 122 33761	22pF 5% 50V
2534	4822 122 33761	22pF 5% 50V
2535	4822 122 33761	22pF 5% 50V
2536	4822 122 33761	22pF 5% 50V
2537	4822 126 14315	390pF 5% 50V 0603
2538	4822 126 14315	390pF 5% 50V 0603
2539	4822 126 13879	220nF +80-20% 16V
2540	4822 126 13879	220nF +80-20% 16V
2543	4822 124 80151	47µF 16V
2544	2238 586 59812	100nF 20% 50V 0603
2550	4822 126 13879	220nF +80-20% 16V
2551	3198 017 41050	1µF 10V 0603
2553	4822 126 13879	220nF +80-20% 16V
2554	3198 017 41050	1µF 10V 0603
2555	4822 124 23002	10µF 16V
2556	2238 586 59812	100nF 20% 50V 0603
2607	2238 586 59812	100nF 20% 50V 0603
2608	2238 586 59812	100nF 20% 50V 0603
2609	2238 586 59812	100nF 20% 50V 0603
2610	2238 586 59812	100nF 20% 50V 0603
2611	2238 586 59812	100nF 20% 50V 0603
2612	2238 586 59812	100nF 20% 50V 0603
2613	2238 586 59812	100nF 20% 50V 0603
2614	4822 124 80151	47µF 16V
2615	2238 586 59812	100nF 20% 50V 0603
2617	2238 586 59812	100nF 20% 50V 0603
2618	2238 586 59812	100nF 20% 50V 0603
2619	2238 586 59812	100nF 20% 50V 0603
2620	2238 586 59812	100nF 20% 50V 0603
2621	4822 124 80151	47µF 16V
2622	4822 124 80151	47µF 16V
2623	2238 586 59812	100nF 20% 50V 0603
2624	2238 586 59812	100nF 20% 50V 0603
2625	2238 586 59812	100nF 20% 50V 0603
2626	2238 586 59812	100nF 20% 50V 0603
2627	2238 586 59812	100nF 20% 50V 0603
2628	2238 586 59812	100nF 20% 50V 0603
2629	2238 586 59812	100nF 20% 50V 0603
2630	2238 586 59812	100nF 20% 50V 0603
2631	2238 586 59812	100nF 20% 50V 0603
2632	4822 122 33741	10pF 10% 50V
2700	2238 586 59812	100nF 20% 50V 0603
2701	2238 586 59812	100nF 20% 50V 0603
2702	2238 586 59812	100nF 20% 50V 0603
2703	2238 586 59812	100nF 20% 50V 0603
2704	2238 586 59812	100nF 20% 50V 0603
2705	2238 586 59812	100nF 20% 50V 0603
2706	4822 124 23002	10µF 16V
2707	4822 124 23002	10µF 16V
2708	2238 586 59812	100nF 20% 50V 0603
2709	4822 124 23002	10µF 16V
2710	2238 586 59812	100nF 20% 50V 0603
2711	2238 586 59812	100nF 20% 50V 0603
2712	2238 586 59812	100nF 20% 50V 0603
2713	4822 124 23002	10µF 16V
2714	5322 126 11578	1nF 10% 50V 0603
2715	2020 552 94427	100pF 5% 50V

-WW-

3100	4822 051 30103	10kΩ 5% 0.062W
3101	4822 051 30103	10kΩ 5% 0.062W
3112	4822 051 30103	10kΩ 5% 0.062W
3116	4822 051 30103	10kΩ 5% 0.062W
3117	4822 051 30103	10kΩ 5% 0.062W
3119	4822 051 30103	10kΩ 5% 0.062W
3128	4822 051 30103	10kΩ 5% 0.062W
3130	4822 051 30103	10kΩ 5% 0.062W
3131	4822 051 30103	10kΩ 5% 0.062W
3133	9965 000 23109	22Ω 5% 0603
3134	9965 000 23109	22Ω 5% 0603
3135	9965 000 23109	22Ω 5% 0603
3137	4822 051 30103	10kΩ 5% 0.062W
3138	4822 051 30103	10kΩ 5% 0.062W
3139	4822 051 30339	33Ω 5% 0.062W
3140	5322 117 13036	1.2kΩ 1% 0.063W 0603
3141	4822 051 30103	10kΩ 5% 0.062W
3142	4822 051 30101	100Ω 5% 0.062W
3143	4822 051 30101	100Ω 5% 0.062W
3144	4822 051 30101	100Ω 5% 0.062W
3146	4822 051 30101	100Ω 5% 0.062W
3147	4822 051 30101	100Ω 5% 0.062W
3151	4822 051 30103	10kΩ 5% 0.062W
3154	4822 051 30103	10kΩ 5% 0.062W
3156	3198 031 13390	4X 33Ω 5% 1206
3157	3198 031 13390	4X 33Ω 5% 1206
3158	3198 031 13390	4X 33Ω 5% 1206
3159	3198 031 13390	4X 33Ω 5% 1206
3160	4822 051 30339	33Ω 5% 0.062W
3161	4822 051 30339	33Ω 5% 0.062W
3162	4822 051 30339	33Ω 5% 0.062W
3163	4822 051 30103	10kΩ 5% 0.062W
3200	4822 051 30332	3.3Ω 5% 0.062W
3205	4822 051 30103	10kΩ 5% 0.062W
3206	4822 051 30332	3.3Ω 5% 0.062W
3207	4822 051 30332	3.3Ω 5% 0.062W
3209	4822 051 30101	100Ω 5% 0.062W
3210	4822 051 30101	100Ω 5% 0.062W
3211	4822 051 30103	10kΩ 5% 0.062W
3300	3198 021 31080	1Ω 5% 0603
3301	3198 021 31080	1Ω 5% 0603
3303	3198 021 31080	1Ω 5% 0603
3304	5322 117 13046	1.8kΩ 1% 0.063W 0603
3306	2322 704 61002	1kΩ 1%
3307	2322 704 61001	100Ω 1% 0603
3312	3198 021 31080	1Ω 5% 0603
3313	3198 021 31080	1Ω 5% 0603
3314	3198 021 31080	1Ω 5% 0603
3315	4822 051 30102	1kΩ 5% 0.062W
3316	4822 051 30102	1kΩ 5% 0.062W
3317	2322 704 63302	3.3kΩ 1% 0603
3318	3198 021 31080	1Ω 5% 0603
3319	3198 021 31080	1Ω 5% 0603
3320	3198 021 31080	1Ω 5% 0603
3321	3198 021 31080	1Ω 5% 0603
3322	5322 117 13042	3.9kΩ 1% 0.063W 0603
3323	5322 117 13057	820Ω 1% 0.063W 0603
3324	4822 051 30102	1kΩ 5% 0.062W
3325	4822 117 13632	100kΩ 1% 0603 0.62W
3326	4822 051 30103	10kΩ 5% 0.062W
3327	4822 051 30339	33Ω 5% 0.062W
3328	4822 117 13632	100kΩ 1% 0603 0.62W
3330	3198 021 31820	1.8kΩ 5% 0.062W 0603
3331	2322 704 61001	100Ω 1% 0603
3332	5322 117 13055	75Ω 1% 0.063W 0603
3333	4822 051 30273	27kΩ 5% 0.062W
3333	4822 117 12925	47kΩ 1% 0.063W 0603
3334	4822 051 30103	10kΩ 5% 0.062W
3334	4822 051 30333	33kΩ 5% 0.062W
3403	4822 051 30103	10kΩ 5% 0.062W
3404	4822 051 30561	560Ω 5% 0.062W
3405	4822 051 30102	1kΩ 5% 0.062W
3406	4822 051 30102	1kΩ 5% 0.062W
3407	4822 051 30689	68Ω 5% 0.063W 0603
3411	4822 051 30181	180Ω 5% 0.062W
3420	4822 051 30339	33Ω 5% 0.062W
3421	4822 051 30339	33Ω 5% 0.062W
3422	4822 051 30153	15kΩ 5% 0.062W
3423	4822 051 30153	15kΩ 5% 0.062W
3500	4822 051 30102	1kΩ 5% 0.062W
3501	4822 117 12968	820Ω 5% 0.62W
3502	4822 051 30683	68kΩ 5% 0.062W
3503	4822 051 30102	1kΩ 5% 0.062W
3504	4822 117 13613	2.2Ω 5% 0603
3505	4822 117 12968	820Ω 5% 0.62W
3506	4822 051 30333	33kΩ 5% 0.062W
3507	4822 051 30152	1.5Ω 5% 0.062W
3508	4822 117 13613	2.2Ω 5% 0603
3509	4822 051 30102	1kΩ 5% 0.062W
3510	4822 051 30683	68kΩ 5% 0.062W
3511	4822 117 12968	820Ω 5% 0.62W
3512	4822 051 30101	100Ω 5% 0.062W
3513	4822 051 30101	100Ω 5% 0.062W
3514	4822 051 30102	1kΩ 5% 0.062W
3515	4822 051 30333	33kΩ 5% 0.062W
3516	4822 117 12968	820Ω 5% 0.62W
3517	4822 051 30152	1.5Ω 5% 0.062W
3519	4822 051 30759	75Ω 5% 0.062W
3520	4822 051 30759	75Ω 5% 0.062W
3521	4822 051 30759	75Ω 5% 0.062W
3522	4822 051 30759	75Ω 5% 0.062W
3523	4822 051 30759	75Ω 5% 0.062W
3526	4822 051 30759	75Ω 5% 0.062W
3527	4822 051 30759	75Ω 5% 0.062W
3528▲	5322 117 11726	10Ω 5%
3530	4822 051 30759	75Ω 5% 0.062W
3532	4822 051 30561	560Ω 5% 0.062W
3533	4822 051 30759	75Ω 5% 0.062W
3534	4822 117 12891	220kΩ 1%
3535	4822 117 13632	100kΩ 1% 0603 0.62W
3537	4822 117 12891	220kΩ 1%
3538	4822 117 13632	100kΩ 1% 0603 0.62W
3539	4822 051 30759	75Ω 5% 0.062W
3540	4822 051 30561	560Ω 5% 0.062W
3547	4822 051 30759	75Ω 5% 0.062W
3548	4822 051 30561	560Ω 5% 0.062W
3557	4822 117 13632	100kΩ 1% 0603 0.62W
3558	4822 051 30102	1kΩ 5% 0.062W
3559	4822 051 30681	680Ω 5% 0.062W
3560	4822 051 30273	27kΩ 5% 0.062W
3561	4822 051 30271	270Ω 5% 0.062W
3562	4822 051 30151	150Ω 5% 0.062W
3563	4822 117 13632	100kΩ 1% 0603 0.62W
3564	4822 051 30102	1kΩ 5% 0.062W
3565	4822 051 30681	680Ω 5% 0.062W
3566	4822 051 30273	27kΩ 5% 0.062W
3567	4822 051 30271	270Ω 5% 0.062W
3568	4822 051 30151	150Ω 5% 0.062W
3570	4822 051 30689	68Ω 5% 0.063W 0603
3571	4822 051 30151	150Ω 5% 0.062W
3606	4822 051 30101	100Ω 5% 0.062W
3607	4822 051 30101	100Ω 5% 0.062W
3608	4822 051 30103	10kΩ 5% 0.062W
3609	4822 051 30472	4.7Ω 5% 0.062W
3610	4822 051 30472	4.7Ω 5% 0.062W
3612	4822 051 30472	4.7Ω 5% 0.062W
3613	4822 117 13632	100kΩ 1% 0603 0.62W
3614	4822 117 13632	100kΩ 1% 0603 0.62W
3615	4822 051 30102	1kΩ 5% 0.062W
3618	4822 117 13632	100kΩ 1% 0603 0.62W
3619	4822 117 13632	100kΩ 1% 0603 0.62W

3621	4822 051 30339	33Ω 5% 0.062W
3622	3198 031 13390	4X 33Ω 5% 1206
3623	4822 051 30472	4.7Ω 5% 0.062W
3624	3198 031 13390	4X 33Ω 5% 1206
3625	4822 051 30101	100Ω 5% 0.062W
3626	4822 051 30272	2.7kΩ 5% 0.062W
3627	4822 051 30272	2.7kΩ 5% 0.062W
3629	4822 051 30101	100Ω 5% 0.062W
3630	4822 051 30101	100Ω 5% 0.062W
3631	4822 051 30101	100Ω 5% 0.062W
3635	4822 051 30339	33Ω 5% 0.062W
3636	4822 051 30684	680kΩ 5% 0.062W
3637	4822 117 12891	220kΩ 1%
3638	4822 051 30331	330Ω 5% 0.062W
3639	4822 051 30391	390Ω 5% 0.062W
3640	4822 051 30684	680kΩ 5% 0.062W
3641	4822 117 12891	220kΩ 1%
3642	4822 051 30331	330Ω 5% 0.062W
3643	4822 051 30331	330Ω 5% 0.062W
3644	3198 031 13390	4X 33Ω 5% 1206
3645	4822 051 30103	10kΩ 5% 0.062W
3700	4822 051 30101	100Ω 5% 0.062W
3701	4822 051 30101	100Ω 5% 0.062W
3702	3198 031 13390	4X 33Ω 5% 1206
3703	3198 031 13390	4X 33Ω 5% 1206
3704	4822 051 30103	10kΩ 5% 0.062W
3705	3198 031 13390	4X 33Ω 5% 1206
3707	4822 051 30103	10kΩ 5% 0.062W
3708	4822 051 30103	10kΩ 5% 0.062W
3709	4822 051 30103	10kΩ 5% 0.062W
3710	4822 051 30103	10kΩ 5% 0.062W
3711	4822 051 30103	10kΩ 5% 0.062W
3712	4822 051 30103	10kΩ 5% 0.062W
3713	2322 704 62002	2kΩ 1%
3715	4822 051 30103	10kΩ 5% 0.062W
3716	4822 051 30103	10kΩ 5% 0.062W
3717	4822 051 30103	10kΩ 5% 0.062W
3718	4822 051 30103	10kΩ 5% 0.062W
3719	4822 051 30103	10kΩ 5% 0.062W
3720	4822 051 30103	10kΩ 5% 0.062W
3721	4822 051 30103	10kΩ 5% 0.062W
3722	4822 051 30103	10kΩ 5% 0.062W
3723	3198 031 13390	4X 33Ω 5% 1206
3724	3198 031 13390	4X 33Ω 5% 1206
3725	4822 051 30339	33Ω 5% 0.062W
3726	4822 051 30339	33Ω 5% 0.062W
3727	4822 051 30479	47Ω 5% 0.062W
3728	4822 051 30479	47Ω 5% 0.062W
3729	4822 051 30479	47Ω 5% 0.062W
3730	4822 051 30479	47Ω 5% 0.062W
3731	4822 051 30479	47Ω 5% 0.062W
3732	4822 051 30479	47Ω 5% 0.062W
3733	4822 051 30479	47Ω 5% 0.062W
3734	4822 117 13573	4 x 47Ω 5%
3738	4822 051 30479	47Ω 5% 0.062W
3739	4822 051 30479	47Ω 5% 0.062W
3740	4822 051 30479	47Ω 5% 0.062W
3741	4822 051 30479	47Ω 5% 0.062W
3742	4822 051 30479	47Ω 5% 0.062W
3743	4822 051 30479	47Ω 5% 0.062W
3744	4822 051 30479	47Ω 5% 0.062W
3745	4822 051 30479	47Ω 5% 0.062W
3746	4822 051 30479	47Ω 5% 0.062W
3747	4822 051 30479	47Ω 5% 0.062W
3748	4822 051 30479	47Ω 5% 0.062W
3749	4822 051 30339	33Ω 5% 0.062W
3750	4822 051 30339	33Ω 5% 0.062W
3751	4822 051 30472	4.7Ω 5% 0.062W
3752	4822 051 30472	4.7Ω 5% 0.062W

5100	4822 157 11499	Bead 60Ω at 100MHz
5101	4822 157 11717	Bead 50Ω at 100MHz
5102	4822 157 11717	Bead 50Ω at 100MHz
5103	4822 157 11717	Bead 50Ω at 100MHz
5201	4822 157 11499	Bead 60Ω at 100MHz
5202	4822 157 11499	Bead 60Ω at 100MHz
5203	4822 157 11499	Bead 60Ω at 100MHz
5300	2422 536 00491	47µ
5301	4822 157 10452	10µH 10%
5302	2422 535 94639	10µH 20%
5303	2422 536 00548	100µ
5304	4822 157 10452	10µH 10%
5305	2422 536 00548	100µ
5306	4822 157 10452	10µH 10%
5307	2422 535 94639	10µH 20%
5309	3198 018 90050	Bead 1kΩ at 100MHz
5401	4822 157 11499	Bead 60Ω at 100MHz
5420	2422 549 44197	Bead 220Ω at 100MHz
5502	4822 157 11499	Bead 60Ω at 100MHz
5504	4822 157 11499	Bead 60Ω at 100MHz
5505	4822 157 11499	Bead 60Ω at 100MHz
5507	4822 157 11499	Bead 60Ω at 100MHz
5508	4822 157 11499	Bead 60Ω at 100MHz
5511	3198 018 52280	2.2µF 10% 1008
5512	3198 018 52280	2.2µF 10% 1008
5513	3198 018 52280	2.2µF 10% 1008
5514	3198 018 52280	2.2µF 10% 1008
5528	4822 157 11499	Bead 60Ω at 100MHz
5600	4822 157 11499	Bead 60Ω at 100MHz
5601	4822 157 11499	Bead 60Ω at 100MHz
5602	4822 157 11499	Bead 60Ω at 100MHz
5700	4822 157 11499	Bead 60Ω at 100MHz
5701	4822 157 11499	Bead 60Ω at 100MHz
5702	4822 157 11499	Bead 60Ω at 100MHz
5703	4822 157 11499	Bead 60Ω at 100MHz
5704	4822 157 11499	Bead 60Ω at 100MHz

6300	9322 128 70685	SMSS14
6303	9322 128 70685	SMSS14
6304	9322 128 70685	SMSS14
6307	9965 000 20150	1N4148WS SOD-323
6400	9340 548 52115	PDZ5.1B
6401	4822 130 10837	UDZS8.2B
6403	4822 130 10837	UDZS8.2B
6503	4822 130 11397	BAS316
6504	4822 130 11397	BAS316

7100	9352 744 74557	SM PNX8316HS/C102
7200	9322 206 20668	M29W320DT70N6F
7202	9322 213 88668	K4S281632F-TC60
7203	9322 130 41668	M24C64-WMN6
7300	4822 209 60059	MC34063AP1
7301	9322 184 19687	LD1117V18
7302	9322 216 98687	LD1117V
7303	4822 209 60059	MC34063AP1
7305	4822 209 60059	MC34063AP1
7306	9322 165 15685	NCP303LSN30
7307	9322 202 15687	LD1117V50
7308	9322 202 15687	LD1117V50
7309	4822 130 60373	BC856B
7310	3198 010 70510	TL431CZ
7311	9322 214 70685	SM SI2314EDS-E3
7312	5322 130 60159	BC846B
7402	5322 130 60159	BC846B
7403	9322 150 49668	LM3525M-H
7500	4822 130 60373	BC856B
7501	5322 130 60159	BC846B
7502	9352 668 39118	SM UDA1334ATS/N2
7503	4822 130 60373	BC856B
7504	5322 130 60159	BC846B
7505	5322 130 60159	BC846B
7506	5322 130 60159	BC846B
7507	5322 130 60159	BC846B
7510	5322 130 60159	BC846B
7511	4822 130 60373	BC856B
7512	5322 130 60159	BC846B
7513	4822 130 60373	BC856B
7514	5322 130 60159	BC846B
7600	9352 732 45557	TDA10046AHT/C1
7601	5322 209 70225	LM393D
7605	9352 630 16165	SM 74AHC1GU04GW
7606	9352 630 16165	SM 74AHC1GU04GW
7700	9322 172 92671	CIMAX 2.0
7701	9352 190 10118	74LVC573ADB
7702	9352 190 10118	74LVC573ADB
7703	9352 115 40118	74LVC245APW
7704	2722 171 08821	XTL 27MHz 50pF
7705	9322 175 13668	ST890CD

11. Revision List

Manual xxxx xxx xxxx.0

- First release.

Manual xxxx xxx xxxx.1

- Chapter 7: PSU schematics and PWB's [A] added.
- Chapter 10: PSU parts list [A] added and software items updated.